



Rocky Flats Environmental Technology Site

RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)

559 CLOSURE PROJECT

Buildings 559, 561 and 528

REVISION 0

January 25, 2002

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RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)

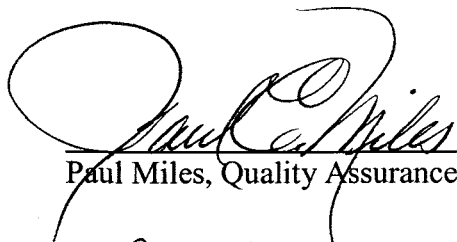
559 CLOSURE PROJECT

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REVISION 0

January 25, 2002

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- A Facility Location Map
- B Historical Site Assessment Report
- C Radiological Data Summaries and Survey Maps
- D Chemical Data Summaries and Sample Maps
- E Data Quality Assessment (DQA) Detail

ABBREVIATIONS/ACRONYMS

ACM	Asbestos containing material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
CERCLA	Comprehensive Emergency Response, Compensation and Liability Act
CHWA	Colorado Hazardous Waste Act
DCGL _{EMC}	Derived Concentration Guideline Level – elevated measurement comparison
DCGL _W	Derived Concentration Guideline Level – Wilcoxon Rank Sum Test
D&D	Decontamination and Decommissioning
DDCP	Decontamination and Decommissioning Characterization Protocol
DOE	U.S. Department of Energy
DPP	Decommissioning Program Plan
DQA	Data quality assessment
DQOs	Data quality objectives
EPA	U.S. Environmental Protection Agency
FDPM	Facility Disposition Program Manual
HVAC	Heating, ventilation, air conditioning
HSAR	Historical Site Assessment Report
IHSS	Individual Hazardous Substance Site
IWCP	Integrated Work Control Package
K-H	Kaiser-Hill
LBP	Lead-based paint
LLW	Low-level waste
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
NORM	Naturally occurring radioactive material
NRA	Non-Rad-Added Verification
OSHA	Occupational Safety and Health Administration
PARCC	Precision, accuracy, representativeness, comparability and completeness
PCBs	Polychlorinated Biphenyls
PDS	Pre-demolition survey
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFFO	Rocky Flats Field Office
RLC	Reconnaissance Level Characterization
RLCR	Reconnaissance Level Characterization Report
RSA	Removable surface activity
RSP	Radiological Safety Practices
SVOCs	Semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
TSA	Total surface activity
UBC	Under Building Contamination
VOCs	Volatile organic compounds

EXECUTIVE SUMMARY

A Reconnaissance Level Characterization (RLC) was performed to enable facility "Typing" per the RFETS Decommissioning Program Plan (DPP; K-H, 1999) and compliant disposition and waste management of Buildings 559, 561 and 528. Because these facilities were anticipated to be Type 2 facilities, the characterization was performed in accordance with the Reconnaissance Level Characterization Plan (MAN-077-DDCP). All facility surfaces were characterized in this RLC, including the interior and exterior surfaces (i.e., floors (slabs), walls, ceilings and roofs). Environmental media beneath and surrounding the facilities were not within the scope of this RLCR and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

The RLC encompassed both radiological and chemical characterization to enable compliant disposition and waste management pursuant to the D&D Characterization Protocol (MAN-077-DDCP). The characterization built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report.

Results indicate that radiological contamination exists on interior surfaces in excess of the RLCP-prescribed release limits in all three buildings. Exterior, below-grade surfaces of B559 and B528 may be radiologically and chemically contaminated from historical breaks and leaks in below-grade process waste lines. In addition, groundwater infiltration into B528 may have further contaminated the structure. Contamination levels on these surfaces might exceed unrestricted release limits but are not expected to be high. A coordinated closure and remediation plan(s) (e.g., Demolition Plan) will be developed to characterize present contamination within B528 during and after removal of building systems and to address hazards associated with the removal of contaminated soil and building components.

B559, B561 and B528 contain relatively small amounts of plutonium holdup in building equipment, air ducts, and plenums (compared to amounts in the Type 3 plutonium production facilities). The holdup resides primarily in the glovebox and plenum filters, such that after the filters are removed, the vast majority of gloveboxes, air ducts, plenums, and other contaminated equipment and systems could be managed as surface contaminated objects and not as transuranic waste. The removal of equipment, air ducts, and plenums also will be straightforward, conducted using standard, proven methods that will prevent the release of any residual holdup material.

Friable and non-friable asbestos are present, and fluorescent light ballasts and paints may contain PCBs. Any PCB Bulk Product Waste and asbestos containing materials will be managed and disposed of in compliance with Environmental Protection Agency (EPA) and Colorado Department of Public Health and Environment (CDPHE) regulations.

Based upon this RLCR and subject to concurrence by the CDPHE, Buildings 559, 561 and 528 are considered to be Type 2 facilities. The Type 2 classification is based on the relative complexity associated with decommissioning the facilities. The facilities will not require unique or non-standard techniques for decontamination, dismantlement or demolition. The radiological, chemical and physical hazards are not significant or overly intermingled and can be controlled through standard means.

1 INTRODUCTION

A Reconnaissance Level Characterization (RLC) was performed to enable facility "Typing" per the RFETS Decommissioning Program Plan (DPP; K-H, 1999) and compliant disposition and waste management of Buildings 559, 561 and 528. Because these facilities were anticipated to be Type 2 facilities, the characterization was performed in accordance with the Reconnaissance Level Characterization Plan (MAN-077-DDCP). All facility surfaces were characterized in this RLC, including the interior and exterior surfaces of the facilities (i.e., floors (slabs), walls, ceilings and roofs). Environmental media beneath and surrounding the facilities were not within the scope of this RLC Report (RLCR) and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed. Among these are Buildings 559, 561 and 528. The locations of these facilities are shown in Attachment A, Facility Location Map. In the future these facilities will no longer support the RFETS mission and will be removed to reduce Site infrastructure, risks and/or operating costs.

Before Buildings 559, 561 and 528 can be decommissioned, a Reconnaissance Level Characterization (RLC) must be conducted; this document presents the RLC results. The RLC was conducted pursuant to the Decontamination and Decommissioning Characterization Protocol (MAN-077-DDCP) and the Reconnaissance Level Characterization Plan (RLCP) (MAN-077-DDCP). The RLC built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Report.

1.1 Purpose

The purpose of this report is to communicate and document the results of the RLC effort. RLCs are performed before building decommissioning to define the radiological and chemical conditions of a facility. RLC conditions are compared with the release limits for radiological and non-radiological contaminants. RLC results will enable project personnel to make decommissioning decisions, develop related worker health and safety controls, and estimate waste volumes by waste types.

1.2 Scope

This report presents the radiological and chemical conditions of Buildings 559, 561 and 528. Environmental media beneath and surrounding the facilities are not within the scope of this RLCR and will be addressed using the Soil Disturbance Permit process and in compliance with RFCA. Both facilities and environmental media will be dispositioned pursuant to RFCA.

1.3 Data Quality Objectives

The Data Quality Objectives (DQOs) used in designing this RLC were the same DQOs identified in the Reconnaissance Level Characterization Plan (RLCP) (MAN-077-DDCP). Refer to Appendix D, Section 2.0 of MAN-077-DDCP for these DQOs.

2 HISTORICAL SITE ASSESSMENT

Facility-specific Historical Site Assessments (HSAs) were conducted to understand facility histories and related hazards. The assessments consisted of facility walkdowns, interviews, and document review, including review of the Historical Release Report (refer to the D&D Characterization Protocol, MAN-077-DDCP). Results were used to identify data gaps and needs, and to develop radiological and chemical characterization packages. Results of the facility-specific HSAs were documented in one Historical Site Assessment Report (HSAR). Refer to Attachment B, Historical Site Assessment Report, for a copy of the HSAR. In summary, the HSAR identified the potential for radiological and chemical hazards, including the potential for asbestos containing materials and PCBs in paint and light ballasts.

3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

Radiological characterization was performed to define the nature and extent of radioactive materials that may be present on or in B559, B561 and B528. Measurements were performed to evaluate the contaminants of concern. Based on facility histories, personnel interviews, and previously collected radiological survey and isotopic data, radiological surveys were conducted for uranium, plutonium, and related radioactive isotopes. Therefore, alpha and beta (as an added measure) contamination surveys were performed, and the results were compared to the RLCP uranium and plutonium surface contamination guidelines.

A Radiological Characterization Plan (refer to 559 Cluster Characterization Project files) was developed during the planning phase that describes how the facilities were broken-down into survey areas and the minimum measurement requirements per survey area. Based on facility histories, building walkdowns, and MARSSIM guidance, survey areas were developed and each building was broken down to meet size requirements specified in the RLCP.

It is assumed that all facility systems are potentially contaminated and will be disposed of as low-level, low-level-mixed, or transuranic waste during facility decommissioning, and will not affect the facility typing determination. Therefore, only exterior surfaces of facility system piping, ducting, conduit, plenums, equipment, etc. were considered during the RLC.

Radiological survey area packages were developed for each survey area in accordance with Radiological Safety Practices (RSP) 16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation and Closure*. Total Surface Activity (TSA), removable and scan measurements were collected in accordance with RSP 07.02, *Contamination Monitoring Requirements* (interior and exterior RLC surveys). Radiological survey data were verified, validated and evaluated in accordance with RSP 16.04, *Radiological Survey/Sample Data Analysis*. Quality Control measures were implemented throughout the survey and sampling process in accordance with RSP 16.05, *Radiological Survey/Sample Quality Control*.

A total of 445 TSA measurements, 445 RSA measurements, and scan surveys were performed on the three facilities. Results confirmed that all anticipated Type 2 facility interiors (B559, B561, and B528) contain radiological contamination above the surface contamination guidelines provided in the RLCP. Exterior RLC survey data did not indicate surface contamination in excess of RLCP guidelines. Radiological data, analysis results, and survey locations are presented in Attachment C, Radiological Data Summaries and Survey Maps. Radiological survey packages are maintained in the 559 Cluster Characterization Project files.

Paint samples were also collected in B559, Rooms 101, 101E, 102, 103, 103D and 103E. Sample results indicate that all rooms sampled contain both transuranic and uranium contamination in excess of guidelines provided in the RLCP. Paint sample data, analysis results, and survey locations are presented in Attachment C, Radiological Data Summaries and Survey Maps.

The following Table 3.2 summarizes the rooms and surfaces where contamination was found above the RLCP surface contamination guidelines from all RLC data sources. Contamination in Building 559 is present in only four rooms, covering approximately 15,000 square feet, or 49% of the total building square footage. This square footage of contamination is relatively small compared to the square footage of contamination present in the Type 3 production buildings, which exceeds 100,000 square feet in some buildings.

Table 3.2 Radiological Data Summary

(X = Areas above RLCP Surface Contamination Guidelines, O = Areas below RLCP Surface Contamination Guidelines)

Room	Floors & Lower Walls	Upper Walls & Ceilings	Equipment
B559, Survey Area A	O	O	O
B559, Survey Area B	X	X	* X
B559, Survey Area C	X	X	* X
B559, Survey Area D	O	O	* X
B559, Survey Area E	X	X	* X
B559, Survey Area F	O	O	O
B559, Survey Area G	O	O	O
B559, Survey Area H	O	O	O

* Systems and equipment are assumed to be internally contaminated.

B559, B561 and B528 also contain plutonium holdup, conservatively estimated at 1,365 grams, 77 grams, and 2 grams, respectively. The holdup in B559 is located in facility equipment and the ventilation system (1,215 grams and 150 grams, respectively). The holdup in B561 is located in the plenums, and the holdup in B528 is located within building equipment. The amount of holdup in the 559 Cluster is small relative to amounts in the Type 3 plutonium production facilities, ranging from 3% of the amount in B707 to 11% of the amount in B371. In addition, the holdup resides primarily in the glovebox and plenum filters, such that after the filters are removed, the vast majority of gloveboxes, air ducts, plenums, and other contaminated equipment and systems could be managed as surface contaminated objects and not as transuranic waste, unlike much of the contaminated equipment and systems coming out of the production facilities.

The removal of filters, equipment, air ducts, and plenums also will be straightforward, conducted using standard, proven methods that will prevent the release of any holdup material (refer to the RSOP for Component Removal, Size Reduction, and Decontamination Activities). The plutonium holdup will be removed prior to the Pre-Demolition Surveys using controls to prevent releases to the environment.

Building 559 roof was replaced in 1985. During the replacement, the ceiling area above Room 102 was found to be contaminated. The roof/ceiling sections above Room 102, and possibly other roof/ceiling sections of 559, should be further characterized prior to demolition and managed appropriately.

Building 559 has a ventilation recirculation air tunnel underneath the main laboratory rooms (Rooms 101, 102 and 103). The tunnel is 12 feet wide, 8 feet tall and 192 feet long. A ventilation plenum in Room 129 draws air from the main laboratory rooms through the tunnel, filters the air, and then recirculates the filtered air back into the rooms. The tunnel is considered part of the B559 ventilation system and is posted as an Airborne Radioactivity Area; therefore, the tunnel was not characterized per the RLCP. This tunnel is known to be radiologically contaminated, however, the amount of contamination in the tunnel is consistent with a Type 2 classification. The Zone 1 glovebox ventilation system is separate from this recirculation air system.

Although no contamination was found during the RLC, B559 Room 129, which houses the main laboratory rooms recirculation ventilation plenum (FP-304) and housed portions of the old portions of the Zone 1 ventilation system (prior to B561 building being built), has a potential for contamination due to ventilation system operations and should be more thoroughly characterized during the PDS phase.

Building 528 contains a High Contamination Area (HCA), consisting of two pumps and the area beneath them. The contamination resulted from pump seal leaks and is localized. The area will be remediated when the pump is removed, prior to building demolition. A separate engineering package to remove the contaminated items is being prepared and will be executed under the Decommissioning Program Plan, Section 1.1.5.

Exterior, below-grade surfaces of B559 and B528 may be contaminated from historical breaks and leaks in below-grade process waste lines (associated with UBC 559, UBC 528 and IHSS 500-159). Also, groundwater infiltration into B528 may have contaminated interior surfaces. A coordinated closure and remediation plan will be developed to characterize present contamination during and after removal of B528 systems and to address hazards associated with contaminated soil and exterior building surfaces.

As a result of the information presented above, and subject to concurrence by the CDPHE, B559 Cluster anticipated Type 2 facilities (i.e., 559, B561, & B528) are confirmed to be Type 2 facilities from a radiological standpoint. Other factors supporting this typing include the following:

- B559 has operated as a laboratory throughout its history, with few major configuration changes, unlike the production facilities.
- The laboratory has only handled sample quantities of radioactive materials, not bulk production quantities as handled in the production facilities.
- The laboratory never processed bulk radioactive liquids and therefore has little contaminated piping, unlike the production facilities.

- The gloveboxes are small and not complex, in comparison to those in the production facilities, and are not connected by chainveyors. Minimal size reduction will be required, because most of the gloveboxes are bolted together.
- Locations of contamination are known and are generally localized. The levels of radioactivity detected were not unexpected.

4 CHEMICAL CHARACTERIZATION AND HAZARDS

Buildings 559, 561 and 528 were characterized for chemical hazards per the RLCP. Chemical characterization was performed to determine the nature and extent of chemical contamination that may be present on or in these facilities. Based upon a review of historical and process knowledge, visual inspections, and RLCP DQOs, additional sampling needs were determined. A Chemical Characterization Plan (refer to 559 Cluster Characterization Project files) was developed during the planning phase that describes sampling requirements and the justification for the sample locations and estimated sample numbers. Contaminants of concern included asbestos, beryllium, RCRA/CERCLA constituents, and PCBs. Refer to Attachment D, Chemical Summary Data and Sample Maps, for details on sample results and sample locations.

The chemical hazards present in Buildings 559, 561 and 528 include asbestos, and may include metals and PCBs in paints and PCBs in fluorescent light ballasts. There are no hazards associated with beryllium and chemical spills. However, exterior, below-grade surfaces of B559 and B528 may be contaminated from historical breaks and leaks in below-grade process waste lines (associated with UBC 559, UBC 528 and IHSS 500-159). Also, the interior of B528 was closed under RCRA/CHWA in 1994, but groundwater infiltration into the facility may have reintroduced contaminants onto building surfaces. Concentrations of chemical contaminants are expected to be low. Based upon the hazards identified and subject to concurrence by the CDPHE, B559 Cluster anticipated Type 2 facilities (i.e., 559, B561, & B528) are also confirmed to be Type 2 facilities from a chemical standpoint. Factors supporting this typing are presented below.

4.1 Asbestos

Based upon the limited, historical data regarding the presence of asbestos containing material (ACM) in Buildings 559, 561 and 528, it was decided that all potential materials that could contain asbestos in these buildings do, in fact, contain asbestos. A complete asbestos inspection would be time consuming and costly, therefore no additional asbestos sampling was performed in these buildings.

Suspect ACM in these buildings include, but are not limited to, the following: thermal systems insulation (TSI); transite and gypsum wallboard; drywall joint compound; painted/skim coat surface on cinderblock; floor tile, cove base and mastic adhesive; ceiling tiles; spray-on fireproofing; caulking materials and tar-impregnated roofing. See Section 7 for estimated suspect friable and non-friable asbestos waste volumes.

4.2 Beryllium (Be)

There is sufficient process history that proves beryllium was used, stored, or contained in Buildings 559, 561 and 528, therefore random and biased samples were taken as required to further delineate potential Be contamination (i.e., 110 in B559, 45 in B561, and 14 in B528).

Beryllium sample results for Buildings 559, 561 and 528 were all less than 0.1 $\mu\text{g}/100\text{cm}^2$. Beryllium sample data and sample location maps are contained in Attachment D, Chemical Summary Data and Sample Maps. However, the interiors of building systems, including gloveboxes (less than 25% of the gloveboxes), could contain Be contamination.

4.3 RCRA/CERCLA Constituents

Based on the 559 Cluster HSAR, interviews and facility walkdowns, no unremediated spills of RCRA/CERCLA materials occurred in the facilities, exterior to the gloveboxes. Spills that may have occurred would have been in sample quantities, and would have been immediately cleaned-up by laboratory personnel. Spills occurring inside gloveboxes could have resulted in incidental contamination to the interior surfaces due to inability to access all interior surfaces from the glove ports. However, spills were few and involved only small volumes (i.e., sample quantities). All gloveboxes that could have been contaminated by RCRA/CERCLA constituents are RCRA units and will be closed and disposed of in accordance with CHWA requirements.

Exterior, below-grade surfaces of B528 may be contaminated from historical breaks and leaks in below-grade process waste lines (associated with UBC 559, UBC 528 and IHSS 500-159). Also, the interior of B528 was closed under RCRA/CHWA in 1994, but groundwater infiltration into the facility may have reintroduced contaminants onto building surfaces. Concentrations of chemical contaminants are expected to be low. A coordinated closure and remediation plan will be developed to characterize present chemical contamination during and after removal of building systems and to address hazards associated with contaminated soil and exterior building surfaces.

Twelve samples (9 discreet sample points, plus three duplicates) of the floor coating (paint, epoxy, etc.) in the laboratory areas was taken and analyzed for RCRA toxic metals. All sample concentrations were below the RCRA toxicity limits (refer to Appendix Table D-4 and attached laboratory data results).

Sampling for lead in paint in Buildings 559, 561 and 528 was not performed. Environmental Waste Compliance Guidance #27, *Lead-based Paint (LBP) and Lead-based paint Debris Disposal*, states that LBP debris generated outside of currently identified high contamination areas shall be managed as non-hazardous (solid) wastes, and additional analysis for characteristics of hazardous waste derived from LBP is not a requirement for disposal.

4.4 Polychlorinated Biphenyls (PCBs)

Based on the 559 Cluster HSAR, interviews and facility walkdowns, no unremediated releases from PCB containing items occurred within the facility, and no staining was evident that would have prompted sampling efforts. Some facilities may contain fluorescent light ballasts that may contain PCBs. Therefore, fluorescent light fixtures will be inspected to identify PCB ballasts during removal operations. PCB ballasts will be identified based on factors such as labeling (e.g., PCB-containing and non-PCB-containing), manufacturer, and date of manufacturing. All ballasts that do not indicate "non-PCB" are assumed to be PCB-containing. Based on the age of the facility (pre-1980), painted surfaces are assumed to contain PCBs, and most of the related demolition debris will be managed as PCB bulk product waste. Some portions of B559 maintenance/generator area are photographically documented to be unpainted prior to the 1990s. These areas may be segregated and disposed of as sanitary waste/demolition debris, if it is physically and economically feasible.

5 PHYSICAL HAZARDS

Physical hazards associated with Buildings 559 and 561 consist of those common to standard industrial environments and include hazards associated with energized systems, utilities, and trips and falls. Building 528 possesses similar hazards, as well as hazards associated with the floor being approximately 15 feet below grade. B559 has an underground air recirculation tunnel underneath Rooms 101, 102 and 103 which is 12 feet wide, 8 feet tall and 192 feet long. A coordinated closure and remediation plan(s) will be developed to address all hazards associated with excavation of building components and contaminated soil (e.g., a Demolition Plan). All three facilities have been relatively well maintained and are in good physical condition, and therefore, do not present hazards associated with building deterioration. Physical hazards are controlled by the Site Occupational Safety and Industrial Hygiene Program, which is based on OSHA regulations, DOE orders, and standard industry practices. Based on this hazards assessment, physical hazards have not been identified that would affect a Type 2 classification.

6 DATA QUALITY ASSESSMENT

Data used in making management decisions for decommissioning of Buildings 559, 561 and 528, and consequent waste management, are of adequate quality to support the decisions documented in this report. The data presented in this report (Attachments C, D and E) were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original DQOs of the project.

In summary, the Verification and Validation (V&V) process corroborates that the following elements of the characterization process are adequate:

- ◆ the *number* of samples and surveys;
- ◆ the *types* of samples and surveys;
- ◆ the sampling/survey process as implemented "in the field"; and,
- ◆ the laboratory analytical process, relative to accuracy and precision considerations.

Details of the DQA are provided in Attachment E.

7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

The disposition of Buildings 559, 561 and 528 will generate a variety of wastes, including radiological, PCB and asbestos wastes. A very small volume of waste, including some of the glovebox and plenum filters, will have to be managed as transuranic waste. After filters are removed, the vast majority of gloveboxes, air ducts, plenums, and other contaminated equipment and systems could be managed as surface contaminated objects and not as transuranic waste. Filter removal is a standard maintenance practice. Estimated waste types and waste volumes are presented below by facility. Asbestos containing material and PCB Bulk Product Waste, including PCB ballasts, will be managed pursuant to Site asbestos and PCB abatement and waste management procedures.

Waste Volume Estimates and Material Types, Buildings 559, 561 and 528							
Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM ¹	Other Waste (cu ft)
B559	142,600	100	1300	0	3700	Friable: 37,000 ft ² Non-Friable: 41,000 ft ²	Built-up Roof - 6700
B561	18500	30	250	0	0	Friable: 1500 ft ² Non-Friable: 7500 ft ²	Built-up Roof -- 1100
B528	2300	0	180	200	0	Friable: 1000 ft ²	0

1. Friable building materials include, but are not limited to, thermal systems insulation, surfacing materials (such as spray-on fireproofing), skim coat painted cinderblock surfaces, wall board/joint compound, and other miscellaneous materials which include pipe penetration packing and drop ceiling tiles. Non-friable building materials include, but are not limited to, floor tile, mastic adhesives, corrugated transite wallboard, concrete seam caulking, gaskets, and tar-impregnated roofing.

8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, Buildings 559, 561 and 528 are classified as RFCA Type 2 facilities pursuant to the RFETS Decommissioning Program Plan (DPP; K-H, 1999). The Type 2 classification is based on a review of historical and process knowledge, and newly acquired RLC data, and will be subject to concurrence by the Colorado Department of Public Health and the Environment (CDPHE).

Classification is also based on the relative complexity associated with decommissioning the facilities (as compared to the complexity of decommissioning the Type 3 production facilities). The facilities are relatively small and, based on the hazards present (refer to Sections 3-5), will not require unique or non-standard techniques for decontamination, dismantlement, or demolition. The radiological, chemical and physical hazards, including the relatively small amount of plutonium holdup, are not significant or overly intermingled, and can be controlled through standard means presented in the RSOP for

Component Removal, Size Reduction, and Decontamination Activities and the RSOP for Facility Disposition. For example, the holdup in B559 resides primarily in the glovebox and plenum filters, such that once the filters are removed, the vast majority of gloveboxes, air ducts, and plenums could be managed as surface contaminated objects, and not as transuranic waste. Other factors that support a Type 2 classification include the following:

- B559 has operated as a laboratory throughout its history, with few major configuration changes, unlike the production facilities.
- The laboratory has only handled sample quantities of hazardous materials, not bulk production quantities as handled in the production facilities.
- The laboratory never processed bulk hazardous liquids and therefore has little contaminated piping, unlike the production facilities.
- The gloveboxes are small and not complex, in comparison to those in the production facilities. None are connected by chainveyors. Minimal size reduction will be required, because most are bolted together.
- Only four rooms within B559 have radiological contamination, and the contamination is primarily on the floor (other than contamination with building systems and equipment). None of these rooms are posted as either High Contamination Areas or Airborne Radioactivity Areas, unlike areas in the production facilities.
- There is an air recirculation tunnel underneath B559 Rooms 101, 102 and 103, which is posted as an Air Radioactivity Area. However, the contamination levels in the tunnel are manageable and the physical hazards of the tunnel during demolition can be controlled using standard industrial practices.
- There is no chemical contamination of interior facility surfaces, including beryllium contamination (other than contamination with building systems and equipment).
- Locations of radiological contamination are known and are generally localized. The levels of radioactivity detected were not unexpected.

A detailed, coordinated plan will be developed to safely remediate the 559 and 528 UBCs and IHSS 500-159 and remove the below-grade building components. In addition, the B528 HCA will be removed prior to the Pre-Demolition Survey via an Integrated Work Control Package with an associated Engineering Design Package.

The RLC of Buildings 559, 561 and 528 was performed in accordance with the DDCP and RLCP, all RLCP DQOs were met, and all data satisfied the RLCP DQA criteria. Demolition of these facilities will generate radiological, PCB and asbestos wastes. PCB ballasts and asbestos containing material will be removed and disposed of in compliance with EPA and CDPHE regulations. Environmental media beneath and surrounding the facilities will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

9 REFERENCES

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- PRO-536-BCPR, Beryllium Characterization Procedure, Revision 0, August 24, 1999.
- RFETS, Environmental Waste Compliance Guidance #25, Management of Polychlorinated Biphenyls (PCBs) in Paint and Other Bulk Product Waste During Facility Disposition.
- RFETS, Environmental Waste Compliance Guidance #27, Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal.
- RFETS, Historical Site Assessment for the 559 Cluster, September 2001.

ATTACHMENT A

Facility Location Map

Building Cluster 528, 559, 561

Standard Map Features

- Buildings and other structures
- Solar Evaporation Ponds (SEPs)
- Lakes and ponds
- Streams, ditches, or other drainage features
- Fences and other barriers
- Paved roads
- Dirt roads

DATA SOURCE BASE FEATURES:
Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G ISI, Las Vegas.
Digitized from the orthophotographs, 1/95

Scale = 1 : 12450
1 inch represents approximately 1038 feet
250 500 1000
State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

GIS Data 300-9667700

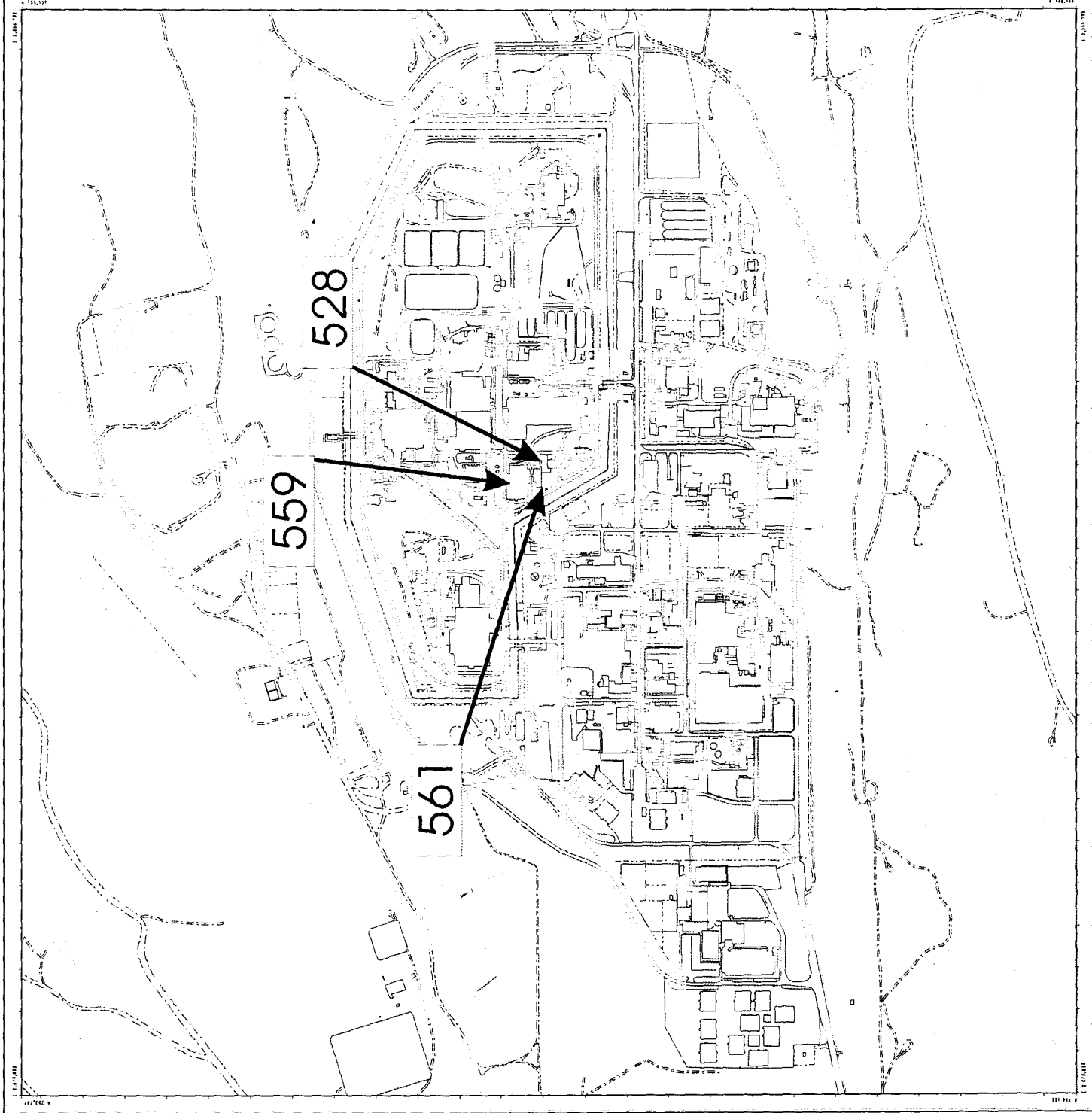
Prepared by:

DynCorp
THE ART OF TECHNOLOGY



MAP ID: FY 2002

October 22, 2001



ATTACHMENT B

Historical Site Assessment Report

**D&D RISS Facility Characterization
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Facility ID: Buildings 559, 564, 563, 562, 561, 559A, 528, The Utility Tunnel Between Building 559 and 561, TK-14, TK-15, Tank 130, Tank 131, Tank 0128, and Tank 0129.

Anticipated Facility Type (1, 2, or 3): Buildings 559, 561, 528, and The Tunnel anticipated Type 2 facilities. Building 564, 563, 562, 559A, TK-14, TK-15, Tank 130, Tank 131, Tank 0128, and Tank 0129 are anticipated Type 1 facilities.

This facility-specific Historical Site Assessment (HSA) has been performed in accordance with:

D&D Characterization Protocol, RFETS MAN-077-DDCP, latest version, and
Facility Disposition Program Manual, RFETS MAN-076-FDPM, latest version

Physical Description

Building 559

Building 559 is the main structure in the Building 559 Cluster and was constructed in 1967. The building is a single-story building with 32,500 square feet of floor space and is approximately 240-feet long by 120-feet wide. In 1969 an annex to Room 103 and a dock was added. In 1972 an addition was added that included the women's locker rooms, and a lunchroom. In 1986, to meet new wind resistance criteria, the building installed a system of steel panels and grits, which span the existing support columns on all sides of the building.

Building 559 has three main laboratory room (Rooms 101, 102, and 103), a men's and a women's locker rooms, two mechanical rooms, a generator room, a HVAC control room, a lunchroom, several offices, and two docks. There is a ventilation air tunnel, which runs east and west under the floor slab of the three main laboratories room in the building. The ventilation air tunnel is 192-feet long by 8-feet high by 12-feet wide, and is used for re-circulating room air in the laboratories.

The building has poured-in-place reinforced concrete footings, which extend to a depth of 5-feet below grade. The structural framing of the building consists of poured-in-place reinforced concrete columns. The exterior walls are concrete blocks between the concrete framing columns and are painted. The floor is a 6-inch-thick, reinforced concrete slab poured on grade. The roof is constructed of 2-inch-thick, pre-cast reinforced concrete slabs, which are resting on vertical structural concrete columns. The roof has a 3-½ inch layer of insulation under the built-up roofing. New built-up roofing was installed in 1998. The roof has gutters and downspouts on the north and south sides of the building.

The interior walls are constructed of cinder block. Ceramic tiles cover the cinder blocks in the locker rooms and restroom areas. The office space and lunchroom ceilings are 2-foot by 2-foot suspended acoustical tile. The ceiling in the remainder of the facility is the underside of the concrete roof panels. The only windows in Building 559 are in the lunchroom. The interior walls and ceilings throughout the facility are painted. The floors in the offices and lunchroom are tiled. Most of the offices have 8-inch floor tiles, however, some offices and the lunchroom have 12-inch floor tiles. The floors in the laboratories and the mechanical rooms are painted concrete. Room 106 is the old computer room and still has the raised flooring.

Building 559 has an underground tunnel leading to Building 561. This tunnel is a utility tunnel, which houses the ventilation ducting for the multiple zones of ventilation in Building 559. Prior to the construction of the Building 561 filter plenum facility the original air plenums were located in room 129 (in Building 559)

Fire protection is provided by a sprinkler system and wall-mounted fire extinguishers. Building 559 is connected to the plants fire alarm system. LSDW system, water, sanitary, electrical, gas and plant steam for heat. This building is also connected to the process waste system through Building 528. Cooling water is provided by the Building 563 cooling tower.

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Building 564

Building 564 is a single-story, pre-fabricated, office building, constructed in 1983. This building has 3000 square feet of floor space and measures approximately 50-feet wide by 60-feet long by 12-feet high. The structure has an entrance on the west side of the building and an entrance on the east side of the building. The building has corrugated metal siding on a steel frame, and was built on a 6-inch-thick, poured-on-grade, concrete slab. The roof was constructed of corrugated steel on a steel frame with no gutters. The insulation was not accessible for inspection.

The interior has a men's restroom, a woman's restroom, 3 hard-walled offices on the south side of the building, and a main work area in the center of the building that is divided into cubical offices. The walls are constructed of painted wallboard. The ceiling is a 2-foot by 3-foot acoustical drop ceiling with recessed fluorescent lights. The floors are carpeted in the office areas and have 12-inch by 12-inch tiles in the restrooms.

The building is hooked up to plant power, water and sanitary. The building has natural gas heat and electrical air conditioning. Fire protection is provided by wall-mounted fire extinguishers and a fire alarm system, but has no overheat sprinkler system. This building is attached to the LSDW system.

Building 561

Building 561 is the filter plenum for Building 559 and was constructed in 1973. This building is a one-story building, with 5700 square feet of floor space and measures 61-feet wide by 93-feet long by 18-feet high. A pit in the northeast corner of the building measures 22-feet long by 22-feet wide by 16-feet deep and provides access to the Building 559 utility tunnel, which houses the ventilation ducts from Building 559. The pit also houses the 5000-gallon firewater deluge tank. Building 561 contains four separate filter plenums, three of the plenum filter exhausts air from Building 559 and the fourth plenum filters supply air from Building 561. Additional information about the ventilation system's operations can be found in the Building 561 Historical Operations section.

The building has reinforced concrete footings, which extend to a depth of 5-feet below grade. The structural framing of the building consists of reinforced concrete columns. The exterior walls are concrete blocks between the concrete framing columns. The floor is a 7-inch-thick reinforced concrete slab poured over 2-inch-thick insulation, built on grade. The roof is constructed of 2-inch-thick, pre-cast reinforced concrete slabs, which are resting on vertical structural concrete columns. The roof has a 2-inch layer of insulation covered with built-up roofing. The roof is slanted for drainage and has no gutters. There is a man entrance on the east side and another on the north side of the building. The exterior walls, interior walls, and floors are painted.

Fire protection is provided by a sprinkler system and wall-mounted fire extinguishers. Building 561 is connected to the plant's fire alarm system, water, electrical, steam for heat and waste process system. The building is not connected to the cooling water system or the LSDW system.

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Building 562

Building 562 is the standby diesel generator building and was built in 1973. This structure is 16-feet wide by 24-feet long and 12-feet high. The foundation is a poured-in-place, reinforced concrete wall, which extends 5-feet below grade. The walls are constructed of concrete cinder block, and the roof is pre-cast, reinforced concrete panels with 2-inches of insulation under built-up roofing. The floor is a 6-inch-thick, reinforced concrete slab. The building has an entrance door on the south side and a double door on the east side of the building.

To the north of the building is a vertical radiator for cooling the diesel generator. This radiator is horizontally mounted on a 5-foot by 6-foot long by 4-foot high steel frame. There is also a 2-foot wide by 5-foot long by 7-foot high metal shed mounted to the side of the building. This shed stored CO2 supply tanks for the building's fire suppression system. These tanks were removed, and the CO2 fire suppression system was replaced with a water system in the mid 1990s.

Building 562 is connected to the plant electric system and plant water, which supplies the fire sprinkler system. Building 562 is not connected to the plant sanitary, process waste, LSDW or the fire alarm systems. Fire protection is provided by a sprinkler system and wall-mounted fire extinguishers. This building has a single electric heater.

Building 563

Building 563 is the east cooling tower and was constructed in 1983. This structure measures approximately 17-feet wide by 23-feet long by 15 feet high, and was built on a 6-inch-thick, poured-on-grade concrete slab. The slab has a 12-inch high containment wall around its perimeter, which acts as the tower spray-water catch basin. The cooling tower is constructed with a wood internal frame, plastic internal dispersion panels and corrugated fiberboard outer walls. The top of the cooling tower has a wood handrail around its perimeter. The tower also has a 12-foot-diameter fiberboard, circular exhaust port in the center of the roof. The water piping is insulated.

The cooling tower has plant water and electrical connections. The cooling tower's blowdown line is connected to the plant sanitary system. Building 563 is not connected to the process waste, fire alarm or LSDW system. Fire protection is provided by an internal sprinkler system.

Building 559A

Building 559A is the accountability board shelter for Building 559 and was built in 1991. The accountability board is a skid-mounted structure that measures approximately 4-feet wide by 6-feet long and 7-feet high. The accountability board is a painted wood structure with an asphalt roof. Building 559A has no windows or doors, but does have an overhang to protect the accountability board from the weather. Building 559A has no utility hook-ups.

Building 528

Building 528 is the waste holding facility for Building 559. Building 528 has restricted access (CA) and could not be entered during this HSA. Building 528 was constructed in the early 1970s and measures 18-feet wide by 35-feet long by 17 feet deep, with the majority of the structure below grade. The building has a single man entrance on the west side of the structure and metal stairs leading to the below-grade pit area. The original roof was constructed of pre-cast, reinforced concrete slabs covered with insulation and built-up roofing. The roof was replaced with a corrugated metal roof in 1989. The walls are 6-inch poured-in-place concrete walls, and the floor is 6-inch poured-in-place concrete floor slab.

The building holds two 2000-gallon low-level waste storage tanks (V-1 and V-2), two pumps for transferring the waste to the waste process system, and a sump along the north wall. If water collects in the sump, the water is pumped into the process waste tanks. The floor of the pit and the bottom 6-inches of the wall are sealed with a gray sealant to act as a containment system. The sump has been lined with a fiberglass coating to seal the concrete. The two tanks inside the building receive waste from Building 559 and Building 561 plenums. The tanks are inter-connected so that when one tank fills, the process waste will divert to the second tank.

Building 528 has electrical, steam for heat, and process waste connections. The building does not have water, sanitary, LSDW or fire alarm connections. Ventilation is provided by plenum FP-300 in Building 561. Fire protection is provided by wall-mounted fire extinguishers.

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TK-14 - TK - 14 is a 1000-gallon aboveground steel diesel storage tank installed in the mid 1990s to replace UST-14 (a.k.a. Tank 130). TK-14 is operational.

TK - 15 - TK - 15 is a 1000-gallon aboveground steel diesel storage tank installed in the mid 1990s to replace UST-15 (a.k.a. Tank 131). TK-15 is operational.

Tank 0129 - Tank 0129 is a 1400-gallon steel aboveground liquid argon tank located south of building 559. Tank 0129 is still operational.

Tank 0128 - Tank 0128 is a 650-gallon steel aboveground liquid nitrogen tank located south of building 559. Tank 0128 is still operational.

Tank 130 - Tank 130 is a 1000-gallon steel underground diesel fuel storage tank located at the north east corner of Building 559. This tank was closed and foamed in place in 1998. See section on historical operation for the name of the closure document.

Tank 131 - Tank 131 is a 3000-gallon steel underground diesel fuel storage tank located east of Building 552. This tank was closed and foamed in place in 1998. See section on historical operation for the name of the closure document.

Historical Operations

Building 559

Building 559 is referred to as the plutonium laboratory because it supported the plutonium production operations. The facility analyzed samples related to production, environmental monitoring and waste characterization. These sample were from the plutonium production facilities, as well as the general plant. Analyses were commonly performed on metals, gases, aqueous solutions, waste salts, solvents and sludges. Each laboratory is equipped with numerous gloveboxes and hoods to facilitate safe handling of the radioactive samples, as well as benches and chemical hoods for the handling of non-radioactive samples.

The laboratories were generally segregated into organic and inorganic analysis. The organic laboratories occupied Room 101 and Room 103. The analyses performed in the organic laboratories involve the identification and quantitative determination of both radioactive and non-radioactive compounds in environmental, waste and product samples. Some of the analysis performed were gas chromatograph, gas mass spectroscopy, and non- destructive assay.

The inorganic laboratories occupied Rooms 101 and 102, with some limited work being performed in Room 103. The inorganic laboratories handled both radioactive and non-radioactive samples. The inorganic laboratories were equipped for radio-chemistry, wet chemical analysis, metals analysis, thermal analysis, physical testing, as well as sample preparation activities such as leaching, acid digestion, and microwave digestion.

Building 564

Building 564 is an office building used to house support personnel for the Building 559 plutonium laboratory. Functional organizations that occupied Building 564 were the Building 559 chemists, waste management engineers, and Lab QA personnel. This building has always been used as an office building.

Building 561

The Building 561 filter plenums are designed to control the spread of contamination through the use of differential pressure. Building 561 has four independent filter plenums. FP-300 is a two-stage exhaust plenum, which exhausts air from Building 559 and Building 528. FP-301 is a two-stage exhaust plenum, which exhausts the air from the hoods in the three laboratory rooms. FP302 is a two-stage exhaust plenum, which exhausts the air from the laboratory gloveboxes. The forth plenum is FP-305, which is used to exhaust the general room air in Building 561.

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Building 562

Building 562 is the emergency generator facility and has always been the emergency generator facility. An underground tank located at the southeast corner of the building originally supplied the generators with diesel fuel. This tank was replaced with an aboveground tank in the late 1990s. The original fire suppression was provided by a CO2 fire suppression system. This system was replaced with a water system in the mid 1990s. See the section on Tank 131 for more information about the original underground diesel tank.

Building 563

Building 563 is a cooling tower that providing Cooling water to Building 559 and is currently operational.

Building 559A

Building 559A is the accountability shelter and has always been the accountability shelter.

Building 528

Building 528 is a waste storage facility, which collects waste from the process waste sinks and the floor drains in the three main laboratory rooms (Rooms 101, 102, 103) in Building 559. In addition, Building 528 is connected to the plenum drains and fire deluge tank in Building 561. Due to radiological contamination (posted as CA), this building could not be entered to perform a physical inspection. The two waste collection tanks (V-1 and V-2) had several leaks in the past. Also, on several occasions, groundwater has seeped into the pit area and was pumped into the process waste tanks. Building 528 is not currently RCRA permitted. In the past, Building 528 was a permitted RCRA unit, which was closed in 1994 (no longer received RCRA waste). This building is currently radiological posted and access is restricted.

TK-14 - TK-14 is a new diesel storage tank and was installed in the late 1990s to replace Tank 130. This tank had no documented releases.

TK-15 - TK-15 is a new diesel storage tank and was installed in the late 1990s to replace Tank 131. This tank had no documented releases.

Tank 0128 - Tank 0128 is a nitrogen tank and was installed as part of the original construction. This tank had no documented releases.

Tank 0129 - Tank 0129 is an argon tank and was installed as part of the original construction. This tank had no documented releases.

Tank 130 - Tank 130 is the old underground diesel tank for the generator in Building 559. The tank was closed and foamed in place in 1998 (Roy F. Weston closure report 1998). This underground storage tank is located directly under the new replacement tank, TK-14.

Tank 131 - Tank 131 is the old underground diesel tank for the emergency generator in Building 562. The tank was closed and foamed in place in 1998 (Roy F. Weston, Closure Report 1998). This underground storage tank is located at the southeast corner of Building 562.

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Current Operational Status

Building 559 is currently operational and provides analytical support for the D&D of the Pu Buildings.

Building 564 is currently operational and housed the support personnel for the Building 559 Pu laboratories.

Building 563 is currently operational active and provides cooling water to Building 559.

Building 562 is currently operational active and houses the Building 559 Clusters emergency generator.

Building 561 is currently operational and houses the air plenums from Building 559.

Building 559A is currently operational and acts as the accountability board for Building 559.

Building 528 is currently operational and houses the process waste collection tank for Building 559.

TK-14 and TK-15 are active diesel tanks. Tank 0128 is an active nitrogen tank. Tank 0129 is an active argon tank.

Tank 130 is a foamed and closed underground diesel tank. Tank 131 is a foamed and closed underground diesel tank.

Contaminants of Concern

Asbestos

Describe any potential, likely, or known sources of Asbestos: None of the facilities in this cluster have had a comprehensive asbestos building inspection performed on them. Building 559, 564 and 561 are posted as potentially containing asbestos. In addition, much of the steam piping and cooling water tanks in Building 559 and 561 are posted asbestos. The 559 decommissioning strategy dated March 22, 2001 states that the ventilation floor penetrations are constructed of transite.

Interviews indicated that asbestos wallboard, ceiling tile and pipe insulation are likely to be found in the Building 559 Cluster Facilities.

Note: SME should evaluate and/or verify this information during the RLC/PDS process. SME may need to review additional documents and perform additional interviews.

Beryllium (Be)

Describe any potential, likely, or known Be production or storage locations: The only facilities in the Building 559 Cluster on the RFETS list of known Be areas are Building 559 and 561. The Building 559 rooms include, but are not limited to, Rooms 101, 101D, 102, 103, 103E and 129. The Building 561 rooms, include, but are not limited to, Plenum 300, Plenum 301, and Plenum 302.

Summarize any recent Be sampling results: No recent Be sampling has been conducted.

Note: SME should evaluate and/or verify this information during the RLC/PDS process. SME may need to review additional documentation and perform additional interviews.

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Lead

Describe any potential, likely, or known sources of Lead (e.g., paint, shielding, etc.): All of the facilities in the Building 559 Cluster may contain lead-based paints, lead in wiring, and lead solder. Some of the gloveboxes in the three main Building 559 laboratory rooms are lead-lined and some of the gloves are lead-lined. Shielding was commonly used during the performance of many of the analysis in the three main laboratories. The X-ray machine in Room 103 has lead shielding.

Note: SME should evaluate and/or verify this information during the RLC/PDS process. SME may need to review additional documentation and perform additional interviews.

RCRA/CERCLA Constituents

Describe any potential, likely, or known sources of RCRA/CERCLA constituents (e.g., chemical storage, waste storage, and processes): Building 559 has several active permitted RCRA units, which are summarized below.

- 1) Unit 90.102 is a mixed residue container storage unit in the gloveboxes in Room 103. This Unit is partially closed in accordance with the "RCRA Closure Plan for Mixed Residue Container Storage Units (11/22/98).
- 2) Unit 90.29 is a mixed residue container storage unit in the gloveboxes in Room 101. This Unit is partially closed in accordance with "RCRA Closure Plan for Mixed Residue Container Storage Units," (11/22/98).
- 3) Unit 559.1 is mixed residue container storage in the gloveboxes in Room 102. This unit is active.
- 4) Unit 881.3B is a bench-scale hazardous waste treatment process in Room 102. The unit has recently been closed, and the summary closure report is expected to be submitted in September of 2001.

Building 561 has an active RCRA unit, which is summarized below.

1. Unit 10 is a mixed waste container storage unit, which is still active.

Building 528 is not currently a RCRA unit, In the past Building 528 was a RCRA unit, which was closed in 1994.

Samples containing RCRA/CERCLA constituents were frequently analyzed in the laboratories of Building 559. The wastes were collected in numerous RCRA Satellite Accumulation Areas located primarily in the laboratory areas.

Building 559 also has a 90-Day Waste Accumulation Area located in Room 103E.

The Building 563 cooling tower has used Chlorine bleach tablets to treat the cooling tower water since the early 1990s. Process knowledge from other cooling towers on site indicates that the following chemicals may have been used to treat the water prior to the early 1990s.

- 1) HTH (R) All-Purpose Algaecide: Ammonium, Alkyl (C12-C16) Dimethylbenzyl-, Chlorides.
- 2) Nalco 2536 Corrosion Inhibitor: Sodium Nitrite and Sodium Tetraborate (anhydrous).
- 3) HTH (R) "Mustard" Algaecide: Alkyldimethyl Dichloro Benzyl Ammonium Chloride and Copper Triethanolamine Complex.

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Describe any potential, likely, or known spill locations (and sources, if any): The laboratory rooms had several releases of sample material. Building 559 did have a release from the waste process line documented in IHSS 500-159. Building 528 was a RCRA permitted unit prior to 1994. Building 528 had several leaks from the process tanks and infiltration of groundwater into the pit.

Describe methods in which spills were mitigated, if any: Spills were clean to the standard of the day. These methods usually involved the use of an absorbent, a detergent, and fixing the contaminated area with paint as necessary.

Note: SME should evaluate and/or verify this information during the RLC/PDS process. SME may need to review additional documentation and perform additional interviews.

PCBs

Describe any potential, likely, or known sources of PCBs (e.g., light ballasts, paints, equipment, etc.): All of the Building 559 Cluster facilities may contain PCB-based paints, electrical equipment and light ballasts with PCBs. No process equipment containing PCBs were located in any of these facilities. The transformer east of building 559 is document in PAC 500-902. See section Below on Environmental Restoration concerns for more information on PAC 500-902.

Describe any potential, likely, or known spill locations (and sources, if any): See section Below on Environmental Restoration concerns for more information on PAC 500-902.

Describe methods in which spills were mitigated, if any: See section Below on Environmental Restoration concerns for more information on PAC 500-902.

Note: SME should evaluate and/or verify this information during the RLC/PDS process. SME may need to review additional documentation and perform additional interviews.

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Radiological Contaminants

Describe any potential, likely, or known radiological production or storage locations: Buildings 559, 561, and 528 are all radiologically posted. Waste from the Building 559 laboratory process waste sinks and drains are collected in the two waste storage tanks in Building 528. Although, the drains in the floors of the 561 plenums are connected to the Building 528 collection tanks, the plenum fire deluge system has never been activated.

Buildings 564, 563, 562, and 559A have no radiological postings.

Describe any potential, likely, or known spill locations (e.g., known leaking sealed radioactive sources, leaking waste drums, potentially contaminated drains, etc.): Building 559 has had a release from the waste process line documented in IHSS 500-159. The three main laboratories in Building 559 have had numerous spills since they became operational in 1967, with most of the spills occurring in Room 102. The interviews indicated that during the installation of the new roof in 1985 contamination was detected in the sub-roofing material. The contamination is located in the sub-roofing material above the main laboratories (see the Dick Link interview for identification of potential contamination in Rooms 129 and 130). Sealed sources were also used to calibrate the instruments, but the exact types of sources were not known.

Building 528 has had numerous leaks from the tanks and piping since its original construction (the exact dates and details are not known).

Note: SME should evaluate and/or verify this information during the RLC/PDS process. SME may need to review additional documentation and perform additional interviews.

Describe methods in which spills were mitigated, if any: Spills were cleaned up to the standards of the day. These methods usually involved the use of an absorbent, a detergent, and fixing the contaminated area with paint as necessary.

Describe any potential, likely, or known isotopes of concern (e.g., weapons grade plutonium, uranium isotopes, pure beta emitters, mixed fission products, etc.): Isotopes of concern include, but are not limited to, plutonium, americium, uranium, and neptunium.

Describe any potential, likely, or known external facility contamination (e.g., stack release points, unfiltered ventilation, facility's physical location to known site releases, etc.): See section Below on Environmental Restoration concerns for more information on PACs, IHSSs, and UBCs related to the Building 559 Cluster.

Note: SME should evaluate and/or verify this information during the RLC/PDS process. SME may need to review additional documentation and perform additional interviews.

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Environmental Restoration Concerns

Describe any ER concerns that could affect facility characterization (e.g., IHSSs, PACs, and UBCs): Several UBCs, IHSSs and PACs effect or are in close proximity to Building 559 and 528.

- 1) Building 559 and 528 each have UBCs.
- 2) IHSS 500-159 – The original waste process line for Building 559 to Building 528 was constructed in 1969 and was made of Pyrex glass. In 1972 it was determined that the line was leaking. Several years later contamination was found in the Building 559 process waste valve pit, and the manhole southwest of Building 559. The 4600 gallon of contaminated water leaked into the Building 528 process waste tank from a broken 3-inch pipe between Building 559 and 528. This IHSSs is still active, see IHSS 500-159 for more details.
- 3) PAC 500-197 – There is a burial ground just west of Building 559. This PAC is being mentioned because of its proximity to Building 559. This PAC is still active, see PAC 500-197 for additional information.
- 4) PAC 500-902 – The transformer on the east side of Building 559 was found to be leaking. This site was remediated in 1995 and a NFA request was submitted in the 1996 HRR annual update and is awaiting approval.

Note: SME should evaluate and/or verify this information during the RLC/PDS process. SME may need to review additional documentation and perform additional interviews.

Additional Information

Describe any additional information that may be useful during facility characterization (e.g., contaminant migration routes, waste handling operations, physical hazards, Historical Release Reports, WSRIC data, etc.): Building 559, 563, 562, 561 and 528 have WSRICs that detail the building waste streams and how they are managed. In general, the building WSRICs detail the management of used oils batteries, maintenance wastes and analytical waste. See the individual building WSRICs for additional information.

References

Provide all sources of information utilized to gather data for facility history (e.g., documents, files, interviews): Sources reviewed to complete this HSA were the RFETS Facility list, the Historical Release Report, Site Master List of RCRA Units, and the Site IHSS, PAC, and UBC databases. The Building 559 has a Facility Safety Analysis, which includes Building 560, 563, 562, 561, 560 and 528. Only building 559, 563, 562, 561, and 528 have a WSRIC. In addition, a facility walkdown and interviews were performed.

Waste Volume Estimates and Material Types

Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM	Other Waste
Building 559	142,600	100	1300	0	3700	TBD	Built-up Roof - 6700
Building 564	1500	50	1000	650	175	TBD	0
Building 563	300	150	50	0	0	TBD	Fiberboard - 250
Building 562	1300	0	80	0	0	TBD	Built-up Roof- 40
Building 561	18500	30	250	0	0	TBD	Built-up Roof - 1100
Building 559A	0	40	0	0	0	TBD	0
Building 528	2300	0	180	200	0	TBD	0
TK-14	100	0	200	0	0	0	0
TK-15	75	0	200	0	0	0	0

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Tank-028	25	0	225	0	0	0	0
Tank-029	25	0	225	0	0	0	0
Tank-130	50	0	200	0	0	0	0
Tank-131	50	0	200	0	0	0	0

Further Actions

Recommend any further actions, if any (e.g., characterization, decontamination, special handling, etc.):

Begin the RLC/PDS process.

Note:

This HSA was performed prior to SME walkdowns, and chemical and radiological characterization package preparations. Information contained in this HSA only represents a "snapshot" in time. Subsequent data may be obtained during SME walkdowns and chemical and radiological characterization package preparations, which may conflict with this report. However, this report will not be amended, and the newer data will take precedence over the data in the report. Newer Data will appear in the RLCR/PDSR. SME may need to review additional documentation and perform additional interviews.

Prepared By:

Doug Bryant

Name

Signature

Date

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ATTACHMENT C

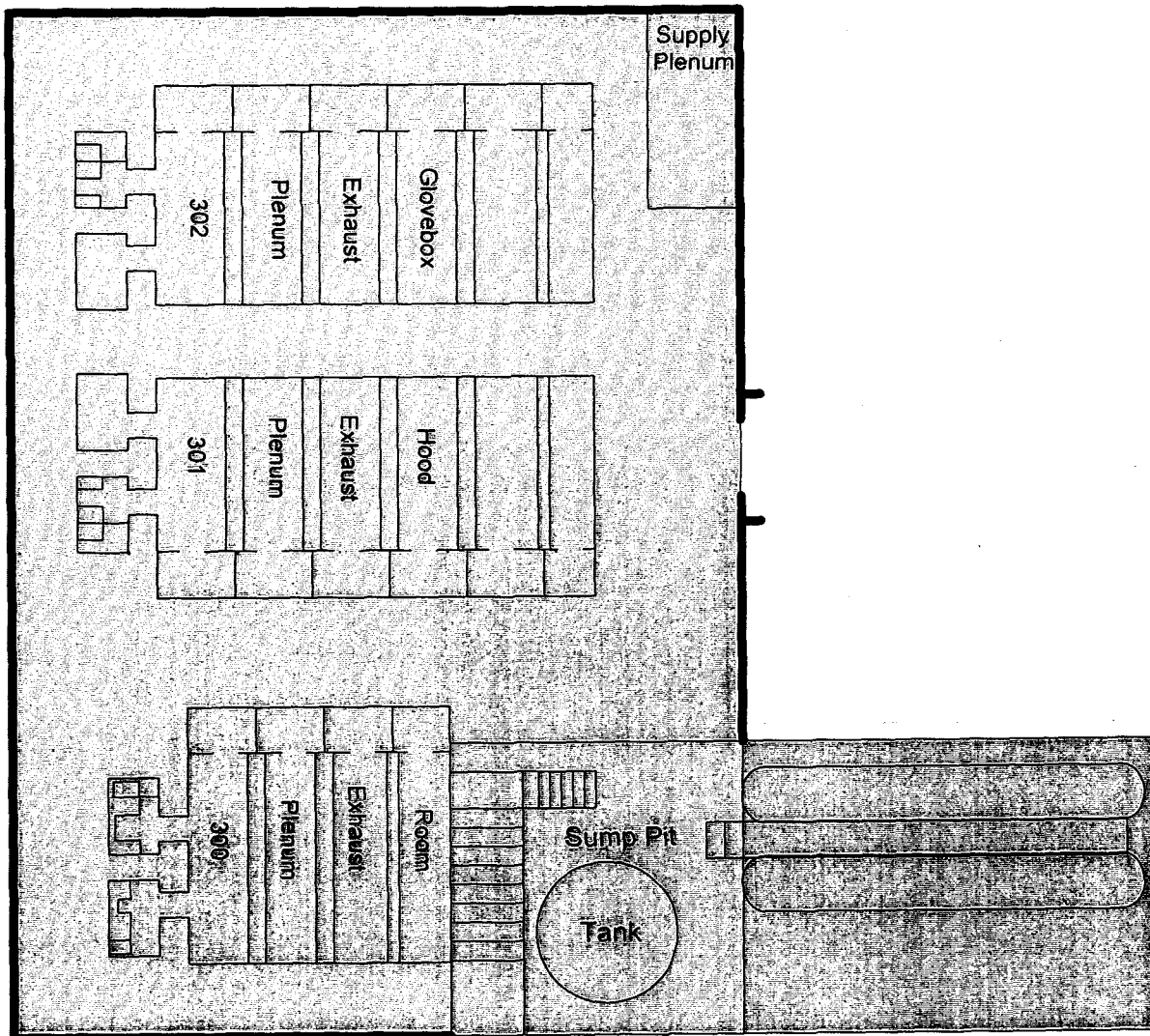
Radiological Data Summaries and Survey Maps

RLC SURVEY FOR B559 CLUSTER

Survey Area: D Survey Unit: N/A Classification: N/A
 Building: 561
 Survey Unit Description: Building & Tunnel
 Total Area: N/A sq. m. Total Floor Area: N/A sq. m.

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Building 561 and Tunnel



<p>SURVEY MAP LEGEND</p> <ul style="list-style-type: none"> ● Smear & TSA Location ◆ Smear, TSA & Sample Location ■ Open/Inaccessible Area □ Area in Another Survey Unit 	<p>Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.</p> <p>Scan Survey Information Survey Instrument ID #(s): _____ RCT ID #(s): _____</p>	<p>N ↑</p> <p>0 30 FEET</p> <p>0 10 METERS</p> <p>1 inch = 24 feet 1 grid sq. = 1 sq. m.</p>	<p>U.S. Department of Energy Rocky Flats Environmental Technology Site</p> <p>Prepared by: GIS Dept. 303-966-7707 Prepared for:</p> <p>DynCorp THE ART OF TECHNOLOGY</p> <p>KAISER HILL CONSULTANTS</p> <p>MAP ID: 01-0256/B561/Area-D January 16, 2002</p>
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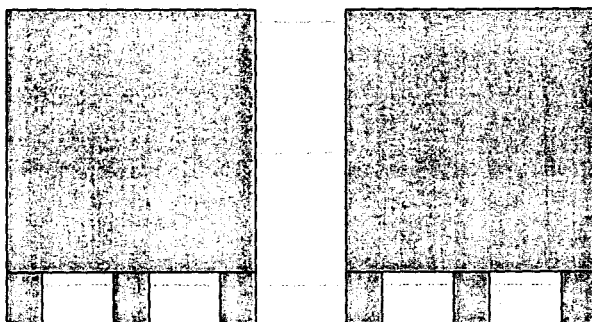
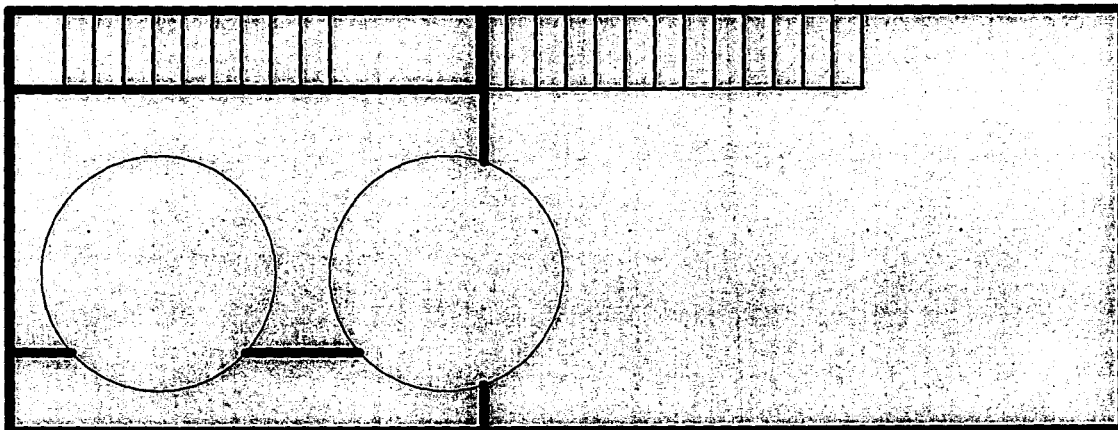
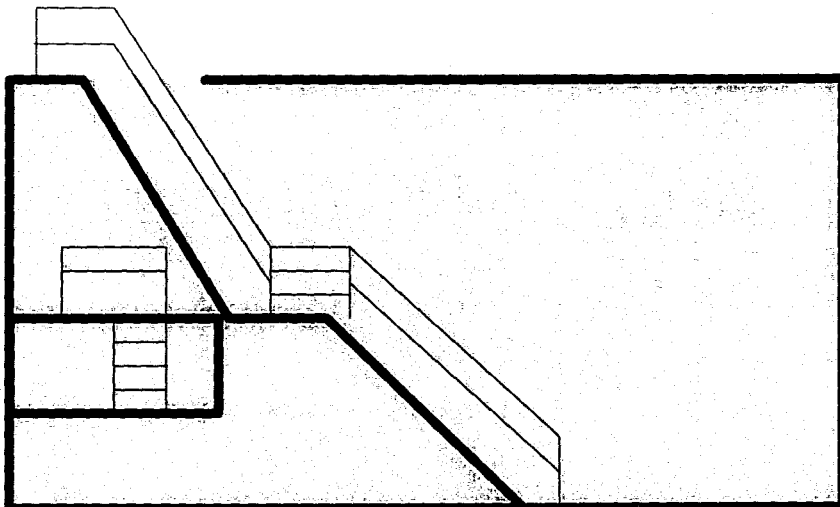
RLC SURVEY FOR B559 CLUSTER



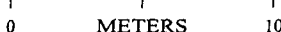


Survey Area: E Survey Unit: N/A Classification: N/A
 Building: 528
 Survey Unit Description: Underline Aisleway Survey Pit
 Total Area: N/A sq. m. Total Floor Area: N/A sq. m.

PAGE 1 OF 1

Building 528

Underline Aisleway Survey Pit

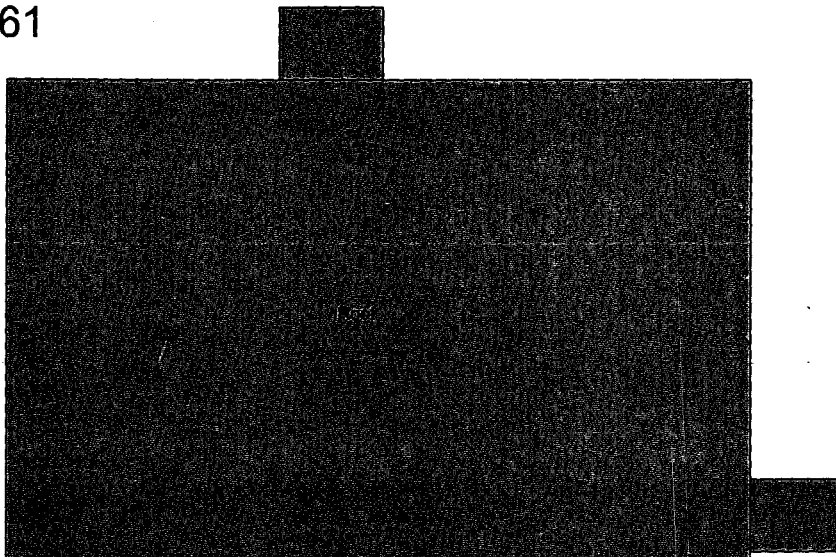


SURVEY MAP LEGEND * Smear & TSA Location * Smear, TSA & Sample Location ■ Open/Inaccessible Area ■ Area in Another Survey Unit	Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Scan Survey Information Survey Instrument ID #(s): _____ RCT ID #(s): _____	<div style="text-align: center;"> N  </div> <div style="text-align: center;"> 0 FEET 30  0 METERS 10  </div> <p>1 inch = 24 feet 1 grid sq. = 1 sq. m.</p>	<div style="text-align: center;"> U.S. Department of Energy Rocky Flats Environmental Technology Site </div> <div style="display: flex; justify-content: space-between;"> <p>Prepared by: GIS Dept. 303-966-7707</p> <p>Prepared for:</p> </div> <div style="display: flex; justify-content: space-between;">   </div> <div style="display: flex; justify-content: space-between;"> <p>MAP ID: 02-0256/B528-E</p> <p>January 16, 2002</p> </div>
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RLC SURVEY FOR B559 CLUSTER

Survey Area: G Survey Unit: N/A Type: 2
 Building: 561
 Survey Unit Description: N/A
 Total Area: 1200 sq. m. Total Floor Area: 540 sq. m.

Building 561



South Wall

East Wall



North Wall

West Wall



SURVEY MAP LEGEND Smear & TSA Location Smear, TSA & Sample Location Open/Inaccessible Area Area in Another Survey Unit	<small>Neither the United States Government nor Kaiser Hill Co., nor DynCorp M&ET, nor any agency thereof, nor any of their employees, make any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.</small> Scan Survey Information Survey Instrument ID #(s): _____ RCT ID #(s): _____		FEET METERS 1 inch = 24 feet 1 grid sq. = 1 sq. m.	U.S. Department of Energy Rocky Flats Environmental Technology Site Prepared by: GHS Dept. 303-966-7707 Prepared for: DynCorp THE ART OF TECHNOLOGY MAP ID: FV02-0845/B561 January 16, 2002
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RLC SURVEY FOR B559 CLUSTER

Survey Area: H

Survey Unit: N/A

Type: 2

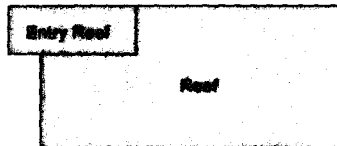
Building: 528

Survey Unit Description: N/A

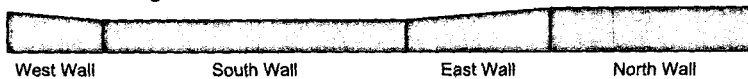
Total Area: 140 sq. m.

Total Floor Area: 66 sq. m.

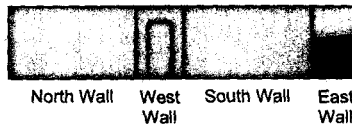
Building 528



Main Building Walls



Entry Walls



SURVEY MAP LEGEND		U.S. Department of Energy Rocky Flats Environmental Technology Site	
Smear & TSA Location	<p>Neither the United States Government nor Kiewit Hill Co., nor DynCorp EA ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.</p>	<p>0 30 0 10 FEET METERS</p> <p>1 inch = 24 feet 1 grid sq. = 1 sq. m.</p>	Prepared by: GHS Dept. 303-866-7707 Prepared for:
Smear, TSA & Sample Location			DynCorp THE ART OF TECHNOLOGY
Open/Inaccessible Area			MAP ID: fv02-0045/B528 January 16, 2002
Area in Another Survey Unit	Scan Survey Information Survey Instrument ID #(s): RCT ID #(s):		

000-0-001

PAGE 1 OF 1

B559 RLC Survey Data Summary

Survey Area A

Alpha Surface Contamination Results in dpm/100 cm²

Page 1 of 2

Floors & walls < 2m				
Point #	RSA	TSA	* Scan	
AF1	< 20	< 94	< 94	
AF2	< 20	< 94	< 94	
AF3	< 20	< 94	< 94	
AF4	< 20	< 94	< 94	
AF5	< 20	< 94	< 94	
AF6	2.1	< 94	< 94	
AF7	0.0	< 94	< 94	
AF8	0.0	< 94	< 94	
AF9	0.0	< 94	< 94	
AF10	2.1	< 94	< 94	
AF11	2.1	6.0	6.0	
AF12	0.0	< 94	< 94	
AF13	0.0	< 94	< 94	
AF14	2.1	< 94	< 94	
AF15	0.0	< 94	< 94	
AF16	0.0	< 94	< 94	
AF17	2.1	2.4	20.4	
AF18	0.0	12.0	12.0	
AF19	0.0	0.0	0.0	
AF20	1.8	0.0	0.0	
AF21	4.8	0.0	0.0	
AF22	1.8	0.0	0.0	
AF23	1.8	0.0	0.0	
AF24	1.8	0.0	0.0	
AF25	1.8	0.0	0.0	
AF26	0.0	36.0	36.0	
AF27	0.0	12.0	24.0	
AF28	0.0	0.0	12.0	
AF29	0.0	0.0	55.8	
AF30	0.0	42.0	10.8	
AF31	< 20	< 94	< 94	
AF32	< 20	< 94	< 94	

Equipment				
Point #	RSA	TSA	* Scan	
AQ1	< 20	< 94	N/A	
AQ2	< 20	< 94	N/A	
AQ3	< 20	< 94	N/A	
AQ4	< 20	< 94	N/A	
AQ5	< 20	< 94	N/A	
AQ6	< 20	< 94	N/A	
AQ7	< 20	< 94	N/A	
AQ8	2.1	< 94	N/A	
AQ9	0.0	< 94	N/A	
AQ10	0.0	0.0	N/A	
AQ11	0.0	0.0	N/A	
AQ12	0.0	42.0	N/A	
AQ13	0.0	78.0	N/A	
AQ14	5.7	12.0	N/A	
AQ15	0.0	18.0	N/A	
AQ16	0.0	6.0	N/A	
AQ17	4.5	100.0	N/A	
AQ18	1.5	0.0	N/A	
AQ19	0.0	18.0	N/A	
AQ20	0.0	12.0	N/A	
AQ21	0.0	0.0	N/A	
AQ22	1.5	12.0	N/A	
AQ23	0.0	18.0	N/A	
AQ24	0.0	42.0	N/A	
AQ25	1.5	12.0	N/A	
AQ26	0.0	36.0	N/A	
AQ27	10.5	24.0	N/A	
AQ28	3.0	18.0	N/A	
AQ29	0.0	54.0	N/A	
AQ30	0.0	54.0	N/A	
AQ31	0.0	6.0	N/A	
AQ32	0.0	18.0	N/A	

Ceilings & walls > 2m				
Point #	RSA	TSA	* Scan	
AC1	0.0	0.0	N/A	
AC2	0.0	30.0	N/A	
AC3	0.0	30.0	N/A	
AC4	4.8	12.0	N/A	
AC5	0.0	36.0	N/A	
AC6	0.0	48.0	N/A	
AC7	0.0	6.0	N/A	
AC8	4.5	36.0	N/A	
AC9	0.0	24.0	N/A	
AC10	0.0	48.0	N/A	
AC11	0.0	36.0	N/A	
AC12	0.0	42.0	N/A	
AC13	0.0	12.0	N/A	
AC14	0.0	30.0	N/A	
AC15	0.0	36.0	N/A	

Scan value typically indicates the highest reading (dpm/100 cm²) within the 1 m² scan area surrounding a specific survey point. RSA and TSA = Removable and Total Surface Activity respectively.

B559 RLC Data Summary

Survey Area A

Beta Surface Contamination Results in dpm/100 cm²

Page 2 of 2

Floors & walls < 2m				
Point #	RSA	TSA	* Scan	
AF1	< 200	957.0	1,008.0	
AF2	< 200	< 455	2,688.0	
AF3	< 200	< 455	< 455	
AF4	< 200	3,645.0	5,484.0	
AF5	< 200	< 455	3,009.0	
AF6	0.0	< 455	< 455	
AF7	0.0	< 455	< 455	
AF8	0.0	< 455	< 455	
AF9	41.6	< 455	< 455	
AF10	0.0	< 455	< 455	
AF11	13.6	0.0	0.0	
AF12	33.6	< 455	< 455	
AF13	0.0	< 455	< 455	
AF14	0.0	< 455	< 455	
AF15	41.6	< 455	< 455	
AF16	37.6	< 455	< 455	
AF17	33.6	228.0	118.0	
AF18	13.6	69.0	111.0	
AF19	0.8	300.0	237.0	
AF20	8.8	320.0	291.0	
AF21	0.0	20.0	15.0	
AF22	12.8	465.0	420.0	
AF23	20.8	700.0	726.0	
AF24	0.0	720.0	774.0	
AF25	0.0	400.0	384.0	
AF26	0.0	468.0	468.0	
AF27	0.0	426.0	519.0	
AF28	0.0	573.0	573.0	
AF29	22.0	123.0	318.0	
AF30	34.0	297.0	168.0	
AF31	< 200	870.0	1,218.0	
AF32	< 200	< 455	1,155.0	

Equipment				
Point #	RSA	TSA	* Scan	
AQ1	< 200	< 455	N/A	
AQ2	< 200	1,008.0	1,179.0	
AQ3	< 200	1,251.0	1,155.0	
AQ4	< 200	< 455	N/A	
AQ5	< 200	< 455	1,701.0	
AQ6	< 200	< 455	3,228.0	
AQ7	< 200	< 455	1,566.0	
AQ8	5.6	< 455	N/A	
AQ9	0.0	< 455	N/A	
AQ10	0.8	0.0	N/A	
AQ11	0.0	0.0	N/A	
AQ12	1.2	0.0	N/A	
AQ13	69.6	0.0	N/A	
AQ14	0.0	0.0	N/A	
AQ15	0.0	0.0	N/A	
AQ16	0.0	0.0	N/A	
AQ17	34.0	0.0	N/A	
AQ18	20.4	237.0	N/A	
AQ19	0.0	0.0	N/A	
AQ20	32.4	0.0	N/A	
AQ21	0.0	0.0	N/A	
AQ22	40.4	0.0	N/A	
AQ23	0.0	0.0	N/A	
AQ24	0.0	0.0	N/A	
AQ25	54.0	0.0	N/A	
AQ26	62.0	0.0	N/A	
AQ27	106.0	0.0	N/A	
AQ28	0.0	0.0	N/A	
AQ29	0.0	0.0	N/A	
AQ30	30.0	0.0	N/A	
AQ31	0.0	0.0	N/A	
AQ32	0.0	0.0	N/A	

Ceilings & walls > 2m				
Point #	RSA	TSA	* Scan	
AC1	0.0	327.0	N/A	
AC2	16.8	744.0	N/A	
AC3	< 200	< 455	2,022.0	
AC4	0.0	0.0	N/A	
AC5	0.0	0.0	N/A	
AC6	0.0	0.0	N/A	
AC7	0.0	0.0	N/A	
AC8	0.0	0.0	N/A	
AC9	20.8	0.0	N/A	
AC10	20.8	204.0	N/A	
AC11	0.0	0.0	N/A	
AC12	0.0	0.0	N/A	
AC13	48.8	201.0	N/A	
AC14	32.8	162.0	N/A	
AC15	0.0	180.0	N/A	

* Scan value typically indicates the highest reading (dpm/100 cm²) within the 1 m² scan area surrounding a specific survey point. RSA and TSA = Removable and Total Surface Activity respectively.

B559 RLC Survey Data Summary

Survey Area B

Alpha Surface Contamination Results in dpm/100 cm²

Page 1 of 2

Floors & walls < 2m				
Point #	RSA	TSA	* Scan	
BF1	< 20	774.0	774.0	
BF2	< 20	174.0	174.0	
BF3	< 20	78,000.0	78,000.0	
BF4	2.7	30.0	49.8	
BF5	0.0	42.0	60.0	
BF6	2.7	18.0	4.8	
BF7	0.0	6.0	49.8	
BF8	0.0	12.0	4.8	
BF9	0.0	54.0	27.0	
BF10	2.7	18.0	33.6	
BF11	2.7	54.0	94.8	
BF12	0.0	84.0	84.0	
BF13	0.0	0.0	13.5	
BF14	2.7	30.0	49.8	
BF15	0.0	6.0	4.8	
BF16	0.0	120.0	0.0	
BF17	0.0	0.0	54.0	
BF18	12.0	66.0	66.0	
BF19	0.0	36.0	48.0	
BF20	0.0	18.0	18.0	
BF21	0.0	48.0	72.0	
BF22	12.0	66.0	96.0	
BF23	0.0	204.0	336.0	
BF24	0.0	0.0	21.0	
BF25	0.0	12.0	21.0	
BF26	1.8	0.0	21.0	
BF27	7.8	24.0	21.0	
BF28	0.0	0.0	49.8	
BF29	6.0	42.0	54.0	
BF30	0.0	18.0	27.0	

Equipment				
Point #	RSA	TSA	* Scan	
BQ1	< 20	< 94	< 94	
BQ2	< 20	5,759,994.0	5,759,994.0	
BQ3	< 20	462.0	462.0	
BQ4	0.0	6.0	N/A	
BQ5	8.7	90.0	N/A	
BQ6	0.0	90.0	N/A	
BQ7	0.0	30.0	N/A	
BQ8	0.0	78.0	N/A	
BQ9	5.7	30.5	N/A	
BQ10	2.7	30.0	N/A	
BQ11	0.0	18.0	N/A	
BQ12	60.0	5,916.0	6,120.0	
BQ13	9.0	36.0	N/A	
BQ14	9.0	24.0	N/A	
BQ15	6.0	18.0	N/A	
BQ16	0.0	48.0	N/A	
BQ17	0.0	36.0	N/A	
BQ18	6.0	66.0	N/A	
BQ19	0.0	36.0	N/A	
BQ20	6.0	6.0	N/A	
BQ21	0.0	18,126.0	21,732.0	
BQ22	0.0	54.0	N/A	
BQ23	6.0	126.0	126.0	
BQ24	3.0	66.0	N/A	
BQ25	0.0	0.0	N/A	
BQ26	0.0	66.0	268.8	
BQ27	0.0	0.0	N/A	
BQ28	4.8	24.0	N/A	
BQ29	0.0	18.0	N/A	
BQ30	0.0	0.0	N/A	

Ceilings & walls > 2m				
Point #	RSA	TSA	* Scan	
BC1	< 20	24,342.0	24,342.0	
BC2	0.0	18.0	0.0	
BC3	0.0	24.0	6.0	
BC4	0.0	42.0	18.0	
BC5	0.0	0.0	0.0	
BC6	0.0	36.0	18.0	
BC7	0.0	24.0	24.0	
BC8	0.0	60.0	18.0	
BC9	0.0	36.0	12.0	
BC10	0.0	18.0	18.0	
BC11	0.0	24.0	30.0	
BC12	0.0	12.0	24.0	
BC13	0.0	24.0	12.0	
BC14	0.0	18.0	12.0	

Scan value typically indicates the highest reading (dpm/100 cm²) within the 1 m² scan area surrounding a specific survey point. RSA and TSA = Removable and Total Surface Activity respectively.

B559 RLC Data Summary

Survey Area B

Beta Surface Contamination Results in dpm/100 cm²

Page 2 of 2

Floors & walls < 2m				
Point #	RSA	TSA	* Scan	
BF1	< 200	588.0	588.0	
BF2	< 200	< 455	< 455	
BF3	< 200	597.0	597.0	
BF4	4.2	0.0	0.0	
BF5	0.0	255.0	210.0	
BF6	5.6	0.0	0.0	
BF7	0.0	246.0	120.0	
BF8	41.6	324.0	108.0	
BF9	0.0	1,665.0	1,920.0	
BF10	5.6	861.0	1,050.0	
BF11	17.6	411.0	717.0	
BF12	34.0	87.0	87.0	
BF13	21.6	510.0	1,065.0	
BF14	5.6	771.0	1,380.0	
BF15	0.0	0.0	108.0	
BF16	0.0	0.0	0.0	
BF17	57.6	195.0	120.0	
BF18	10.0	0.0	0.0	
BF19	14.0	540.0	732.0	
BF20	82.0	738.0	804.0	
BF21	22.0	309.0	324.0	
BF22	0.0	72.0	207.0	
BF23	0.0	129.0	393.0	
BF24	0.0	339.0	420.0	
BF25	0.0	1,224.0	1,734.0	
BF26	0.0	357.0	753.0	
BF27	0.0	795.0	1,344.0	
BF28	0.0	1,071.0	1,149.0	
BF29	0.0	91.0	294.0	
BF30	5.6	285.0	288.0	

Equipment				
Point #	RSA	TSA	* Scan	
BQ1	< 200	< 455	< 455	
BQ2	< 200	1,947.0	1,947.0	
BQ3	< 200	< 455	< 455	
BQ4	13.6	0.0	N/A	
BQ5	1.6	0.0	N/A	
BQ6	4.2	0.0	N/A	
BQ7	0.0	2,733.0	N/A	
BQ8	9.6	3,030.0	N/A	
BQ9	0.0	159.0	N/A	
BQ10	0.0	0.0	N/A	
BQ11	13.6	0.0	N/A	
BQ12	0.0	0.0	N/A	
BQ13	30.0	0.0	N/A	
BQ14	0.0	0.0	N/A	
BQ15	0.0	273.0	N/A	
BQ16	0.0	162.0	N/A	
BQ17	10.0	0.0	N/A	
BQ18	0.0	57.0	N/A	
BQ19	6.0	7,245.0	10,221.0	
BQ20	50.0	0.0	N/A	
BQ21	34.0	15,075.0	15,624.0	
BQ22	0.0	738.0	N/A	
BQ23	22.0	228.0	N/A	
BQ24	34.0	0.0	N/A	
BQ25	0.0	0.0	N/A	
BQ26	31.6	0.0	N/A	
BQ27	63.6	0.0	N/A	
BQ28	0.0	0.0	N/A	
BQ29	43.6	1,002.0	N/A	
BQ30	39.6	2,919.0	N/A	

Ceilings & walls > 2m				
Point #	RSA	TSA	* Scan	
BC1	< 200	< 455	< 455	
BC2	36.4	993.0	921.0	
BC3	0.0	0.0	0.0	
BC4	0.0	2,205.0	3,183.0	
BC5	16.4	720.0	297.0	
BC6	0.0	717.0	498.0	
BC7	0.0	405.0	486.0	
BC8	0.0	777.0	3,024.0	
BC9	0.0	399.0	297.0	
BC10	0.0	0.0	309.0	
BC11	0.0	612.0	549.0	
BC12	0.0	672.0	618.0	
BC13	28.4	12.0	168.0	
BC14	56.4	0.0	0.0	

* Scan value typically indicates the highest reading (dpm/100 cm²) within the 1 m² scan area surrounding a specific survey point. RSA and TSA = Removable and Total Surface Activity respectively.

RLC SURVEY FOR B559 CLUSTER

Survey Area: B

Survey Unit: N/A

Classification: N/A

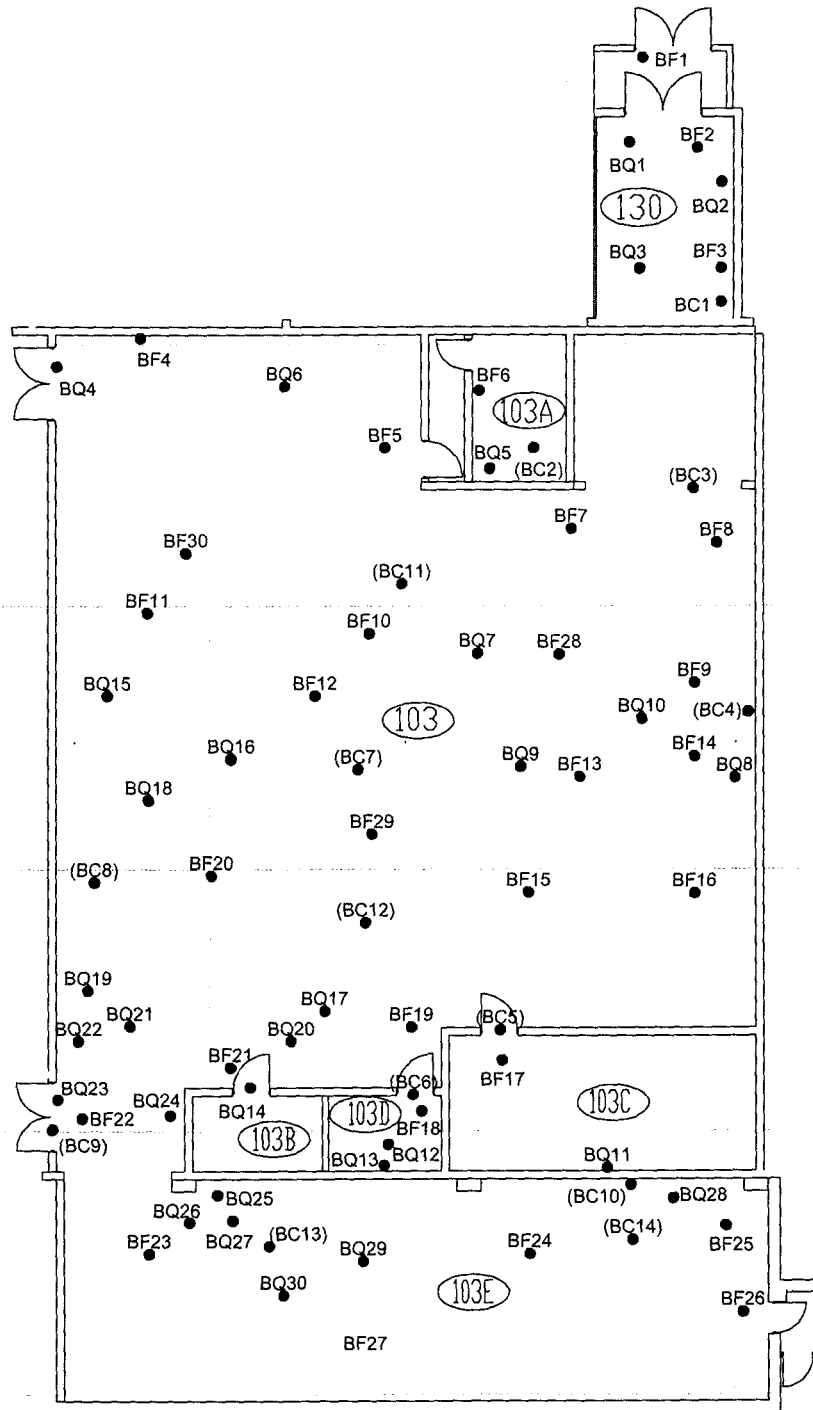
Building: 559

Survey Unit Description: Interior

Total Area: N/A

Total Floor Area: N/A

PAGE 1 OF 1



SURVEY MAP LEGEND

- Smear & TSA Location
- ◆ Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

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Scan Survey Information

Survey Instrument ID #(s):

RCT ID #(s):

Not to Scale

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

Prepared for:

DynCorp

THE ART OF TECHNOLOGY



MAP ID: 02-0256/Area-B

January 11, 2002

B559 RLC Survey Data Summary
Survey Area C
Alpha Surface Contamination Results in dpm/100 cm²

Page 1 of 2

Floors & walls < 2m			
Point #	RSA	TSA	* Scan
CF1	2.7	48.0	84.0
CF2	11.7	72.0	106.8
CF3	8.7	576.0	309.0
CF4	5.7	798.0	648.0
CF5	0.0	6.0	106.8
CF6	0.0	30.0	15.0
CF7	2.1	6.0	60.0
CF8	5.1	18.0	15.0
CF9	0.0	0.0	60.0
CF10	2.1	96.0	105.0
CF11	2.1	12.0	60.0
CF12	2.1	12.0	94.8
CF13	0.0	48.0	127.8
CF14	0.0	216.0	172.8
CF15	0.0	2,712.0	2,730.0
CF16	2.1	30.0	127.8
CF17	0.0	18.0	37.8
CF18	2.1	30.0	15.0
CF19	0.0	48.0	66.0
CF20	5.4	102.0	120.0
CF21	8.4	24.0	24.0
CF22	0.0	0.0	6.0
CF23	0.0	36.0	60.0
CF24	4.5	48.0	6.0
CF25	4.5	36.0	33.0
CF26	0.0	24.0	60.0
CF27	0.0	12.0	0.0
CF28	0.0	12.0	33.0
CF29	1.5	18.0	33.0
CF30	0.0	36.0	37.8
CF31	1.5	24.0	37.8
CF32	0.0	30.0	30.0
CF33	8.4	36.0	48.0
CF34	0.0	42.0	60.0
CF35	14.4	108.0	156.0
CF36	0.0	12.0	30.0
CF37	0.0	36.0	36.0
CF38	2.1	0.0	82.8
CF39	0.0	18.0	60.0
CF40	0.0	42.0	60.0
CF41	2.7	36.0	16.8
CF42	0.0	24.0	39.0

Equipment			
Point #	RSA	TSA	* Scan
CQ1	0.0	72.0	N/A
CQ2	2.7	204.0	331.8
CQ3	0.0	84.0	N/A
CQ4	0.0	12.0	N/A
CQ5	0.0	924.0	876.0
CQ6	0.0	738.0	690.0
CQ7	5.1	36.0	60.0
CQ8	2.1	12.0	15.0
CQ9	0.0	108.0	105.0
CQ10	0.0	30.0	37.8
CQ11	0.0	18.0	15.0
CQ12	0.0	66.0	150.0
CQ13	10.2	156.0	150.0
CQ14	0.0	78.0	15.0
CQ15	5.1	6.0	0.0
CQ16	0.0	71,970.0	64,170.0
CQ17	0.0	24.0	N/A
CQ18	0.0	30.0	N/A
CQ19	5.4	36.0	N/A
CQ20	2.4	72.0	N/A
CQ21	0.0	18.0	N/A
CQ22	0.0	18.0	N/A
CQ23	0.0	78.0	0.0
CQ24	0.0	116.0	105.0
CQ25	0.0	42.0	39.0
CQ26	1.5	0.0	N/A
CQ27	4.5	18.0	60.0
CQ28	1.5	84.0	N/A
CQ29	4.5	114.0	0.0
CQ30	5.4	0.0	N/A
CQ31	0.0	210.0	220.8
CQ32	0.0	12.0	N/A
CQ33	0.0	12.0	0.0

Ceilings & walls > 2m			
Point #	RSA	TSA	* Scan
CC1	3.0	90.0	N/A
CC2	3.0	42.0	N/A
CC3	0.0	78.0	N/A
CC4	9.0	96.0	N/A
CC5	9.0	6.0	N/A
CC6	3.0	12.0	N/A
CC7	18.0	30.0	N/A
CC8	0.0	444.0	N/A
CC9	6.0	300.0	N/A
CC10	27.0	48.0	N/A
CC11	45.0	18.0	N/A
CC12	3.0	6.0	N/A
CC13	3.0	36.0	N/A
CC14	9.0	36.0	N/A

Scan value typically indicates the highest reading (dpm/100 cm²) within the 1 m² scan area surrounding a specific survey point. RSA and TSA = Removable and Total Surface Activity respectively.

B559 RLC Data Summary
Survey Area C
Beta Surface Contamination Results in dpm/100 cm²

Page 2 of 2

Floors & walls < 2m			
Point #	RSA	TSA	* Scan
CF1	25.2	291.0	432.0
CF2	17.2	1,164.0	1,725.0
CF3	0.0	549.0	360.0
CF4	0.0	1,053.0	1,365.0
CF5	41.2	1,284.0	960.0
CF6	1.2	1,812.0	2,280.0
CF7	0.0	162.0	669.0
CF8	13.2	321.0	525.0
CF9	25.2	411.0	480.0
CF10	0.0	168.0	255.0
CF11	0.0	801.0	894.0
CF12	0.0	714.0	1,581.0
CF13	0.0	4,965.0	5,577.0
CF14	5.2	321.0	210.0
CF15	17.2	690.0	549.0
CF16	0.0	12.0	201.0
CF17	0.0	867.0	1,176.0
CF18	9.2	0.0	129.0
CF19	40.0	1,494.0	1,650.0
CF20	0.0	1,131.0	1,311.0
CF21	0.0	414.0	780.0
CF22	27.2	3,360.0	3,681.0
CF23	11.2	1,596.0	1,806.0
CF24	43.2	516.0	678.0
CF25	0.0	25,751.0	26,771.0
CF26	27.2	582.0	768.0
CF27	0.0	1,818.0	1,983.0
CF28	19.2	3,618.0	3,969.0
CF29	27.2	993.0	1,002.0
CF30	23.2	507.0	690.0
CF31	19.2	498.0	408.0
CF21	0.0	414.0	780.0
CF32	40.0	258.0	258.0
CF33	0.0	105.0	117.0
CF34	0.0	375.0	375.0
CF35	0.0	516.0	516.0
CF36	0.0	465.0	465.0
CF37	0.0	84.0	501.0
CF38	1.2	264.0	276.0
CF39	0.0	345.0	423.0
CF40	0.0	255.0	0.0
CF41	0.0	306.0	579.0
CF42	0.0	381.0	450.0

Equipment			
Point #	RSA	TSA	* Scan
CQ1	0.0	0.0	N/A
CQ2	0.0	0.0	N/A
CQ3	0.0	0.0	N/A
CQ4	25.2	0.0	N/A
CQ5	0.0	3,663.0	3,189.0
CQ6	25.2	1,311.0	1,491.0
CQ7	0.0	471.0	726.0
CQ8	21.2	2,670.0	2,961.0
CQ9	0.0	15,630.0	21,840.0
CQ10	0.0	4,716.0	4,812.0
CQ11	0.0	0.0	186.0
CQ12	0.9	261.0	219.0
CQ13	0.0	1,605.0	1,911.0
CQ14	0.0	0.0	0.0
CQ15	45.2	0.0	0.0
CQ16	0.0	1,086.0	1,188.0
CQ17	0.0	0.0	N/A
CQ18	0.0	66.0	N/A
CQ19	7.2	1,971.0	N/A
CQ20	35.2	147.0	N/A
CQ21	0.0	2,544.0	2,544.0
CQ22	0.0	0.0	N/A
CQ23	0.0	1,440.0	2,248.0
CQ24	0.0	18,363.0	132,951.0
CQ25	0.0	22,104.0	22,905.0
CQ26	23.2	96.0	N/A
CQ27	0.0	1,155.0	1,038.0
CQ28	19.2	0.0	N/A
CQ29	23.2	210.0	0.0
CQ30	43.2	0.0	N/A
CQ31	11.2	387.0	567.0
CQ32	7.2	0.0	N/A
CQ33	0.0	1,086.0	918.0

Ceilings & walls > 2m			
Point #	RSA	TSA	* Scan
CC1	20.8	0.0	N/A
CC2	0.8	216.0	N/A
CC3	40.8	390.0	N/A
CC4	0.0	1,269.0	N/A
CC5	24.8	807.0	N/A
CC6	0.0	960.0	N/A
CC7	0.0	459.0	N/A
CC8	40.8	189.0	N/A
CC9	20.8	762.0	N/A
CC10	4.8	1,002.0	N/A
CC11	60.8	873.0	N/A
CC12	0.0	1,221.0	N/A
CC13	0.0	1,461.0	N/A
CC14	24.8	4,173.0	N/A

* Scan value typically indicates the highest reading (dpm/100 cm²) within the 1 m² scan area surrounding a specific survey point. RSA and TSA = Removable and Total Surface Activity respectively.

B559 RLC Survey Data Summary

Survey Area D

Alpha Surface Contamination Results in dpm/100 cm²

Page 1 of 2

Floors & walls < 2m				
Point #	RSA	TSA	* Scan	
DF1	0.0	0.0	0.0	0.0
DF2	0.0	0.0	0.0	0.0
DF3	0.0	0.0	0.0	0.0
DF4	0.0	0.0	0.0	0.0
DF5	0.0	0.0	0.0	0.0
DF6	0.0	0.0	0.0	0.0
DF7	0.0	54.0	60.0	60.0
DF8	12.0	6.0	6.0	6.0
DF9	0.0	12.0	12.0	12.0
DF10	0.0	30.0	30.0	30.0
DF11	6.0	0.0	0.0	12.0
DF12	3.0	0.0	0.0	30.0
DF13	3.0	6.0	6.0	6.0
DF14	6.0	24.0	24.0	24.0
DF15	0.0	24.0	24.0	24.0
DF16	6.0	12.0	12.0	12.0
DF17	0.0	0.0	54.0	54.0
DF18	6.0	12.0	12.0	12.0
DF19	0.0	48.0	48.0	48.0
DF20	0.0	24.0	24.0	24.0
DF21	0.0	42.0	66.0	66.0
DF22	0.0	18.0	42.0	42.0
DF23	0.0	30.0	48.0	48.0
DF24	2.4	18.0	18.0	18.0
DF25	0.0	12.0	42.0	42.0
DF26	2.4	0.0	12.0	12.0
DF27	0.0	42.0	42.0	42.0
DF28	0.0	6.0	12.0	12.0
DF29	0.0	18.0	18.0	18.0
DF30	0.0	0.0	12.0	12.0

Equipment				
Point #	RSA	TSA	* Scan	
DQ1	0.0	0.0	N/A	N/A
DQ2	0.0	0.0	N/A	N/A
DQ3	0.0	0.0	N/A	N/A
DQ4	0.0	0.0	N/A	N/A
DQ5	0.0	0.0	N/A	N/A
DQ6	0.0	0.0	N/A	N/A
DQ7	0.0	0.0	N/A	N/A
DQ8	0.0	0.0	N/A	N/A
DQ9	0.0	6.0	N/A	N/A
DQ10	0.0	6.0	N/A	N/A
DQ11	0.0	42.0	N/A	N/A
DQ12	3.0	6.0	N/A	N/A
DQ13	0.0	6.0	N/A	N/A
DQ14	0.0	0.0	N/A	N/A
DQ15	0.0	18.0	N/A	N/A
DQ16	0.0	42.0	N/A	N/A
DQ17	0.0	30.0	N/A	N/A
DQ18	0.0	30.0	N/A	N/A
DQ19	0.0	6.0	N/A	N/A
DQ20	0.0	18.0	N/A	N/A
DQ21	8.4	30.0	N/A	N/A
DQ22	0.0	12.0	N/A	N/A
DQ23	0.0	42.0	N/A	N/A
DQ24	0.0	12.0	N/A	N/A
DQ25	0.0	6.0	N/A	N/A
DQ26	0.0	30.0	N/A	N/A
DQ27	0.0	24.0	N/A	N/A
DQ28	0.0	36.0	N/A	N/A
DQ29	0.0	30.0	N/A	N/A
DQ30	0.0	12.0	N/A	N/A

Ceilings & walls > 2m				
Point #	RSA	TSA	* Scan	
DC1	0.0	0.0	N/A	N/A
DC2	0.0	0.0	N/A	N/A
DC3	0.0	6.0	N/A	N/A
DC4	0.0	0.0	N/A	N/A
DC5	7.5	0.0	N/A	N/A
DC6	0.0	0.0	N/A	N/A
DC7	0.0	18.0	N/A	N/A
DC8	0.0	6.0	N/A	N/A
DC9	0.0	0.0	N/A	N/A
DC10	0.0	0.0	N/A	N/A

Scan value typically indicates the highest reading (dpm/100 cm²) within the 1 m² scan area surrounding a specific survey point. RSA and TSA = Removable and Total Surface Activity respectively.

B559 RLC Data Summary

Survey Area D

Beta Surface Contamination Results in dpm/100 cm²

Page 2 of 2

Floors & walls < 2m			
Point #	RSA	TSA	* Scan
DF1	0.0	300.0	339.0
DF2	0.0	200.0	147.0
DF3	0.0	0.0	0.0
DF4	0.0	400.0	450.0
DF5	0.0	0.0	0.0
DF6	0.0	230.0	207.0
DF7	0.0	183.0	603.0
DF8	12.8	426.0	465.0
DF9	0.0	114.0	468.0
DF10	0.0	0.0	75.0
DF11	4.8	396.0	396.0
DF12	0.0	0.0	0.0
DF13	28.8	0.0	0.0
DF14	0.0	147.0	147.0
DF15	0.0	0.0	0.0
DF16	0.0	884.0	555.0
DF17	0.0	291.0	291.0
DF18	20.8	108.0	108.0
DF19	0.0	0.0	18.0
DF20	0.0	156.0	213.0
DF21	0.0	0.0	0.0
DF22	0.0	399.0	693.0
DF23	0.0	12.0	93.0
DF24	0.0	0.0	0.0
DF25	0.0	189.0	561.0
DF26	0.0	0.0	0.0
DF27	0.0	129.0	765.0
DF28	36.8	264.0	525.0
DF29	0.0	63.0	63.0
DF30	0.0	66.0	66.0

Equipment			
Point #	RSA	TSA	* Scan
DQ1	0.0	0.0	N/A
DQ2	0.0	0.0	N/A
DQ3	18.4	0.0	N/A
DQ4	6.4	0.0	N/A
DQ5	0.0	0.0	N/A
DQ6	22.4	0.0	N/A
DQ7	22.4	0.0	N/A
DQ8	0.0	0.0	N/A
DQ9	16.8	0.0	N/A
DQ10	32.8	0.0	N/A
DQ11	0.0	0.0	N/A
DQ12	0.0	0.0	N/A
DQ13	0.0	0.0	N/A
DQ14	32.8	0.0	N/A
DQ15	0.0	0.0	N/A
DQ16	0.0	0.0	N/A
DQ17	28.0	0.0	N/A
DQ18	33.6	0.0	N/A
DQ19	0.0	0.0	N/A
DQ20	0.0	0.0	N/A
DQ21	0.0	243.0	N/A
DQ22	60.8	0.0	N/A
DQ23	0.0	0.0	N/A
DQ24	0.0	0.0	N/A
DQ25	0.0	0.0	N/A
DQ26	0.0	0.0	N/A
DQ27	0.0	0.0	N/A
DQ28	17.6	0.0	N/A
DQ29	73.6	0.0	N/A
DQ30	0.0	126.0	N/A

Ceilings & walls > 2m			
Point #	RSA	TSA	* Scan
DC1	48.0	0.0	N/A
DC2	0.0	0.0	N/A
DC3	0.0	0.0	N/A
DC4	24.8	438.0	N/A
DC5	0.0	0.0	N/A
DC6	0.0	0.0	N/A
DC7	0.0	48.0	N/A
DC8	0.0	0.0	N/A
DC9	32.8	0.0	N/A
DC10	0.0	0.0	N/A

* Scan value typically indicates the highest reading (dpm/100 cm²) within the 1 m² scan area surrounding a specific survey point. RSA and TSA = Removable and Total Surface Activity respectively.

RLC SURVEY FOR B559 CLUSTER

Survey Area: D

Survey Unit: N/A

Classification: N/A

Building: 561

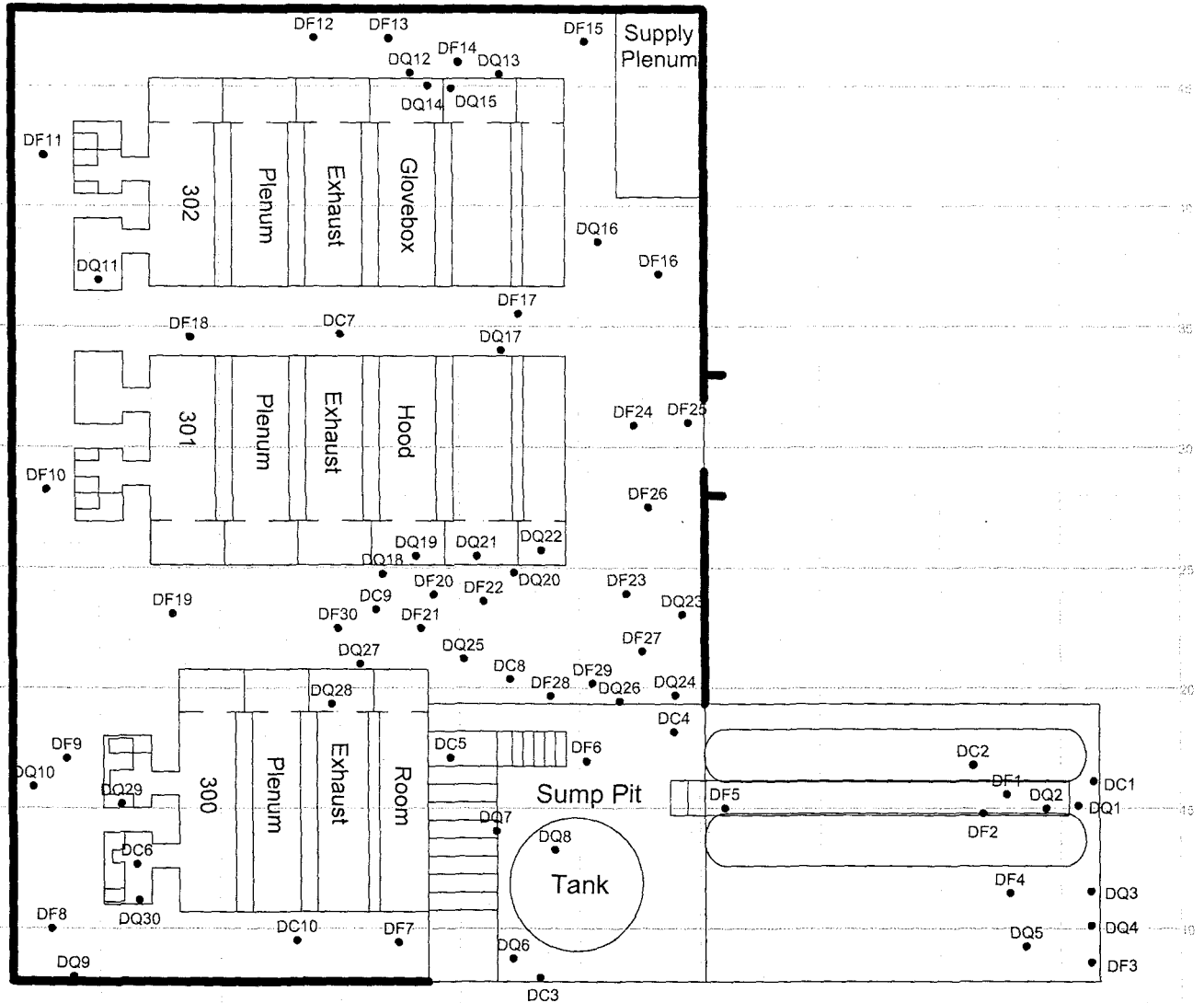
Survey Unit Description: Building & Tunnel

Total Area: N/A sq. m.

Total Floor Area: N/A sq. m.

PAGE 1 OF 1

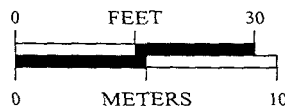
Building 561 and Tunnel



SURVEY MAP LEGEND

- Smear & TSA Location
- ◊ Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

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Scan Survey Information

Survey Instrument ID #(s):

RICT ID #(s):

1 inch = 24 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

Prepared for:

DynCorp
THE ART OF TECHNOLOGY

KAISER HILL
CORP.

MAP ID: 01-0256/B561

January 1, 2001

B559 RLC Survey Data Summary

Survey Area E

Alpha Surface Contamination Results in dpm/100 cm²

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Floors & walls < 2m				
Point #	RSA	TSA	* Scan	
1	26.1	216.0	426.0	
2	14.1	150.0	336.0	
3	74.1	588.0	1,032.0	
4	32.1	192.0	291.0	
5	29.1	564.0	1,320.0	
6	23.1	546.0	516.0	
7	17.1	186.0	177.6	
8	80.1	1,116.0	2,016.0	
9	92.1	426.0	2,136.0	
10	20.1	408.0	426.0	
11	44.1	834.0	538.8	
12	32.1	342.0	358.8	
13	65.1	654.0	3,216.0	
14	20.1	1,764.0	2,832.0	
15	14.1	252.0	2,136.0	
16	23.1	252.0	442.0	
17	17.1	180.0	1,369.0	
18	35.1	294.0	708.0	
19	26.1	1,092.0	2,664.0	
20	11.1	264.0	168.0	
21	20.1	444.0	666.0	
22	17.1	192.0	370.8	
23	50.1	516.0	996.0	
24	401.1	11,124.0	29,442.0	
25	629.1	11,766.0	10,248.0	
26	23.1	606.0	912.0	
27	230.1	16,020.0	66,012.0	
28	32.1	390.0	1,606.8	
29	134.1	1,254.0	9,330.0	
30	41.1	990.0	6,828.0	

Equipment				
Point #	RSA	TSA	* Scan	
31	62.1	114.0	1,350.0	
32	14.1	1,296.0	2,238.0	
33	14.1	126.0	100.8	
34	17.1	1,272.0	864.0	
35	47.1	150.0	348.0	
36	32.1	162.0	370.8	
37	26.1	138.0	258.0	
38	17.1	366.0	415.8	
39	62.1	930.0	1,002.0	
40	20.1	618.0	816.0	
41	38.1	342.0	1,206.0	
42	35.1	2,844.0	3,228.0	
43	14.1	168.0	774.0	
44	20.1	864.0	6,696.0	
45	11.1	282.0	325.8	
46	29.1	1,044.0	2,736.0	
47	38.1	888.0	1,266.0	
48	32.1	2,394.0	15,048.0	
49	26.1	564.0	3,516.0	
50	17.1	1,692.0	1,788.0	
51	2.1	48.0	172.8	
52	26.1	282.0	258.0	
53	35.1	132.0	258.0	
54	5.1	180.0	127.8	
55	41.1	726.0	732.0	
56	290.1	2,718.0	3,768.0	
57	68.1	1,488.0	14,748.0	
58	17.1	228.0	223.8	
59	5.1	78.0	178.8	
60	20.1	450.0	1,122.0	

Ceilings & walls > 2m				
Point #	RSA	TSA	* Scan	
61	8.1	126.0	246.0	
62	8.1	12.0	15.0	
63	8.1	162.0	336.0	
64	8.1	48.0	295.2	
65	26.1	276.0	325.8	
66	2.1	30.0	66.0	
67	2.1	126.0	66.0	
68	2.1	30.0	111.0	
69	14.1	84.0	133.8	
70	8.1	66.0	66.0	

Scan value typically indicates the highest reading (dpm/100 cm²) within the 1 m² scan area surrounding a specific survey point. RSA and TSA = Removable and Total Surface Activity respectively.

B559 RLC Data Summary

Survey Area E

Beta Surface Contamination Results in dpm/100 cm²

Page 2 of 2

Floors & walls < 2m				
Point #	RSA	TSA	* Scan	
1	10.4	246.0	915.0	
2	22.4	318.0	861.0	
3	50.4	360.0	1,164.0	
4	10.4	210.0	636.0	
5	0.0	0.0	612.0	
6	0.0	222.0	726.0	
7	0.0	0.0	702.0	
8	30.4	243.0	984.0	
9	6.4	345.0	534.0	
10	0.0	339.0	702.0	
11	0.0	369.0	432.0	
12	58.4	276.0	612.0	
13	26.4	315.0	996.0	
14	0.0	177.0	624.0	
15	0.0	138.0	321.0	
16	14.4	141.0	351.0	
17	42.4	66.0	258.0	
18	30.4	183.0	138.0	
19	0.0	186.0	126.0	
20	14.4	0.0	72.0	
21	30.4	195.0	0.0	
22	30.4	120.0	168.0	
23	0.0	111.0	270.0	
24	0.0	312.0	1,338.0	
25	14.4	645.0	1,038.0	
26	14.4	273.0	111.0	
27	54.4	843.0	6,114.0	
28	26.4	204.0	1,068.0	
29	0.0	39.0	540.0	
30	0.0	0.0	360.0	

Equipment				
Point #	RSA	TSA	* Scan	
31	0.0	0.0	0.0	
32	30.4	39.0	0.0	
33	0.0	0.0	0.0	
34	10.4	0.0	0.0	
35	2.4	0.0	0.0	
36	0.0	0.0	0.0	
37	0.0	0.0	0.0	
38	14.4	0.0	0.0	
39	0.0	0.0	57.0	
40	2.4	0.0	0.0	
41	0.0	0.0	0.0	
42	14.4	0.0	0.0	
43	0.0	0.0	0.0	
44	10.4	0.0	126.0	
45	10.4	0.0	237.0	
46	22.4	0.0	552.0	
47	0.0	0.0	0.0	
48	2.4	0.0	126.0	
49	30.4	0.0	0.0	
50	14.4	0.0	0.0	
51	26.4	0.0	0.0	
52	0.0	0.0	0.0	
53	0.0	0.0	0.0	
54	0.0	0.0	0.0	
55	0.0	0.0	57.0	
56	0.0	0.0	111.0	
57	14.4	0.0	372.0	
58	50.4	252.0	477.0	
59	0.0	0.0	0.0	
60	0.0	102.0	237.0	

Ceilings & walls > 2m				
Point #	RSA	TSA	* Scan	
61	0.0	843.0	957.0	
62	0.0	492.0	183.0	
63	30.4	333.0	666.0	
64	0.0	297.0	3,117.0	
65	34.4	0.0	606.0	
66	6.4	1,197.0	1,227.0	
67	34.4	981.0	1,104.0	
68	0.0	1,089.0	1,542.0	
69	0.0	1,140.0	849.0	
70	0.0	993.0	765.0	

* Scan value typically indicates the highest reading (dpm/100 cm²) within the 1 m² scan area surrounding a specific survey point. RSA and TSA = Removable and Total Surface Activity respectively.

RLC SURVEY FOR B559 CLUSTER

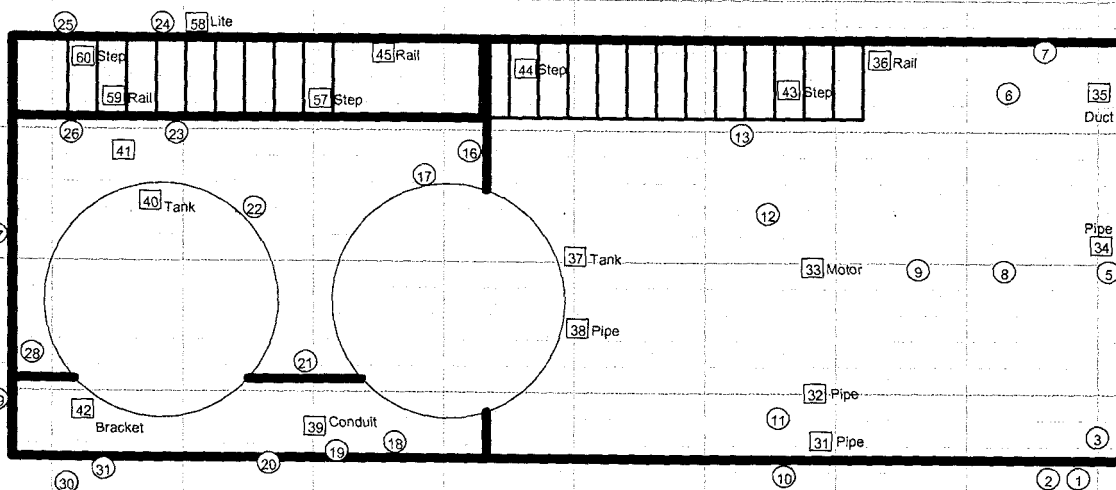
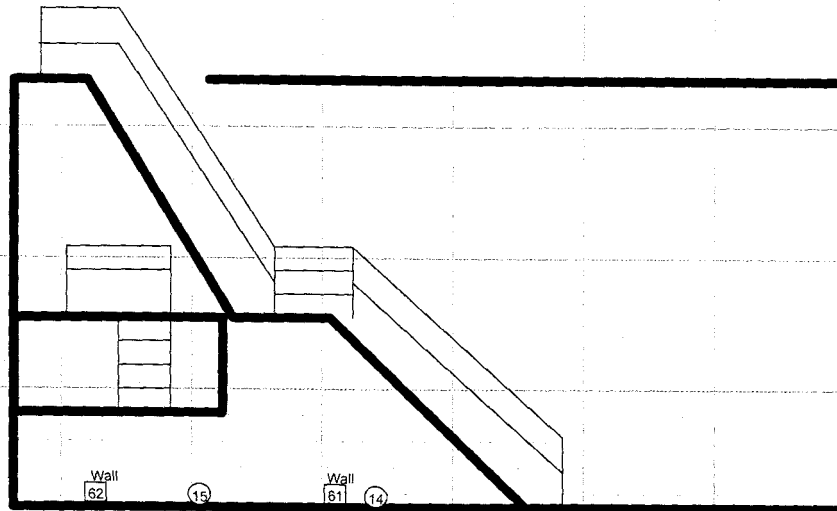
Survey Area: E Survey Unit: N/A Classification: N/A
 Building: 528
 Survey Unit Description: Underline Aisleway Survey Pit
 Total Area: N/A sq. m. Total Floor Area: N/A sq. m.

PAGE 1 OF 1

Building 528

Underline Aisleway Survey Pit

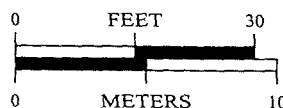
- ☐ Floor & Wall
- ☐ Equipment, Hi Walls & Ceiling



SURVEY MAP LEGEND

- ☒ Smear & TSA Location
- ☒ Smear, TSA & Sample Location
- ☒ Open/Inaccessible Area
- ☒ Area in Another Survey Unit

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1 inch = 24 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
 Survey Instrument ID #(s):
 RCT ID #(s):

U.S. Department of Energy
 Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

Prepared for:

DynCorp
 THE ART OF TECHNOLOGY

KAISER HILL

MAP ID: 02-0256/B528-AreaE

January 1, 2001

B559 RLC Survey Data Summary
Survey Area F
Alpha and Beta Surface Contamination Results in dpm/100 cm²

Page 1 of 1

Survey Point #	Alpha RSA	Alpha TSA	Beta RSA	Beta TSA
1	0.0	120.0	0.0	390.0
2	0.0	48.0	0.0	264.0
3	0.0	60.0	0.0	45.0
4	0.0	6.0	0.0	462.0
5	0.0	36.0	0.0	255.0
6	0.0	54.0	0.0	366.0
7	0.0	24.0	0.0	522.0
8	0.0	30.0	20.0	123.0
9	0.3	24.0	4.0	678.0
10	0.0	42.0	0.0	360.0
11	0.0	54.0	24.0	15.0
12	0.0	18.0	8.0	246.0
13	0.0	36.0	20.0	0.0
14	0.0	12.0	0.0	0.0
15	0.0	48.0	0.0	0.0
16	0.6	12.0	0.0	0.0
17	0.0	24.0	0.0	0.0
18	0.0	42.0	0.0	0.0
19	0.0	36.0	0.0	81.0
20	0.0	36.0	0.0	0.0
21	0.0	36.0	0.0	108.0
22	0.0	18.0	0.0	0.0
23	0.0	30.0	0.0	0.0
24	0.0	18.0	0.0	0.0
25	0.3	36.0	0.0	0.0
26	0.0	42.0	0.0	0.0
27	0.0	48.0	0.0	0.0
28	0.0	36.0	12.0	0.0
29	0.0	42.0	48.0	0.0
30	0.0	84.0	0.0	0.0

All survey points are on the exterior surfaces (i.e., walls and roof). RSA and TSA = Removable and Total Surface Activity respectively.

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B559 RLC Survey Data Summary
Survey Area G
Alpha and Beta Surface Contamination Results in dpm/100 cm²

Page 1 of 1

Survey Point #	Alpha RSA	Alpha TSA	Beta RSA	Beta TSA
1	0.0	36.0	35.6	381.0
2	0.0	36.0	0.0	702.0
3	0.0	12.0	35.6	510.0
4	0.0	12.0	0.0	522.0
5	4.5	24.0	15.6	333.0
6	0.0	54.0	0.0	498.0
7	1.5	24.0	11.6	450.0
8	0.0	6.0	0.0	462.0
9	0.0	48.0	0.0	495.0
10	0.0	24.0	0.0	429.0
11	4.5	12.0	3.6	369.0
12	0.0	18.0	0.0	444.0
13	1.5	18.0	0.0	0.0
14	0.0	42.0	0.0	608.0
15	1.5	84.0	0.0	678.0
16	1.5	120.0	0.0	650.0
17	4.5	84.0	67.6	640.0
18	1.5	60.0	19.6	0.0
19	1.5	48.0	0.0	0.0
20	0.0	48.0	23.6	75.0
21	0.0	6.0	3.6	0.0
22	0.0	114.0	15.6	685.0
23	0.0	60.0	0.0	693.0
24	1.5	96.0	0.0	649.0
25	0.0	84.0	15.6	730.0
26	1.5	48.0	0.0	147.0
27	0.0	60.0	0.0	231.0
28	4.5	90.0	27.6	12.0
29	4.5	42.0	0.0	48.0
30	0.0	24.0	51.6	60.0

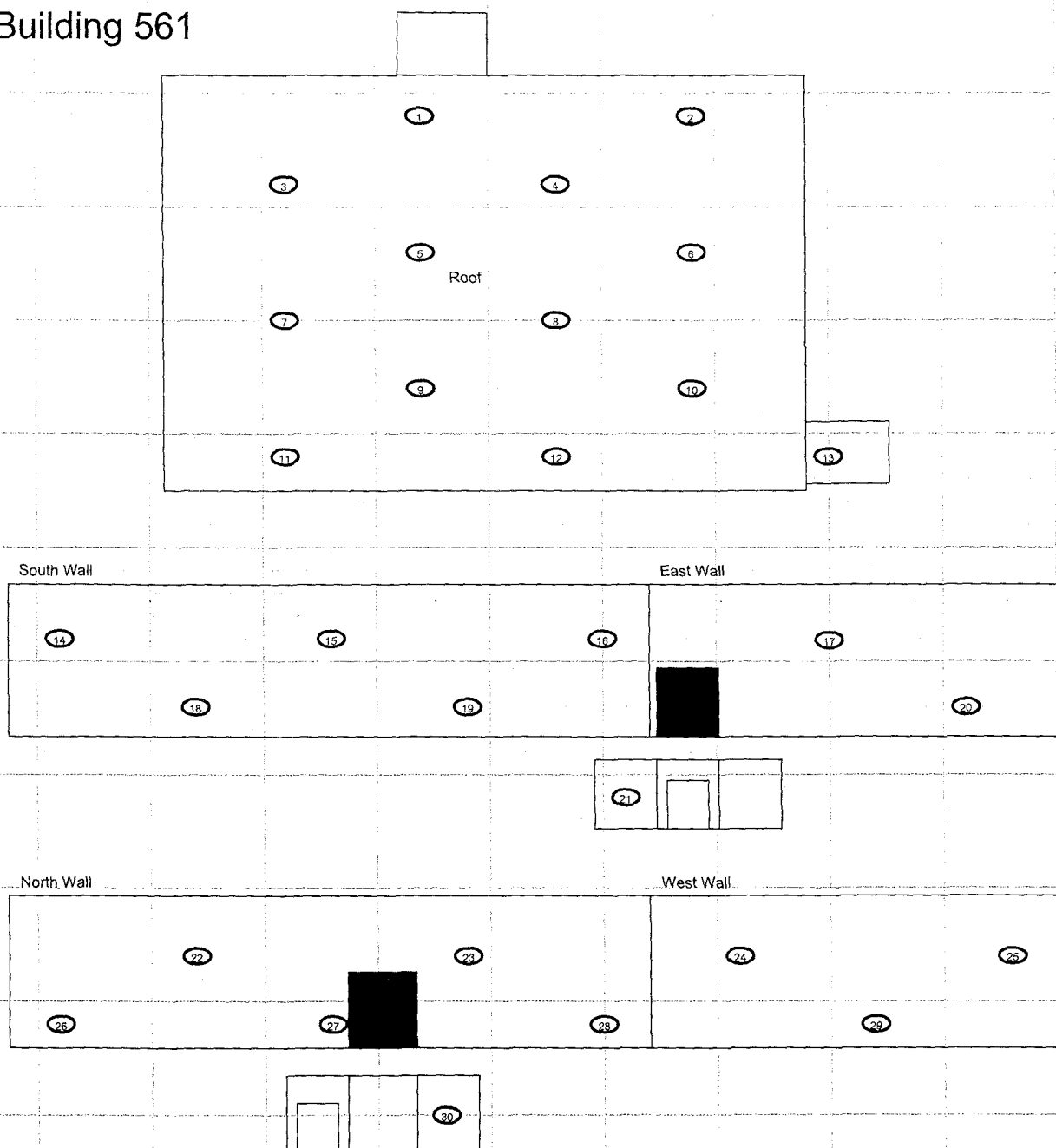
All survey points are on the exterior surfaces (i.e., walls and roof). RSA and TSA = Removable and Total Surface Activity respectively.

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RLC SURVEY FOR B559 CLUSTER

Survey Area: G Survey Unit: N/A Type: 2
 Building: 561
 Survey Unit Description: N/A
 Total Area: 1200 sq. m. Total Floor Area: 540 sq. m.

Building 561



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

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Scan Survey Information
 Survey Instrument ID #(s):
 RCT ID #(s):



1 inch = 24 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
 Rocky Flats Environmental Technology Site
 Prepared by: GIS Dept. 303-956-7707 Prepared for:
DynCorp
 THE ART OF TECHNOLOGY
 KAISER HILL
 MAP ID: fv02-0045/B561 January 18, 2002

000-0-001

PAGE 1 OF 1

B559 RLC Survey Data Summary
Survey Area H
Alpha and Beta Surface Contamination Results in dpm/100 cm²

Page 1 of 1

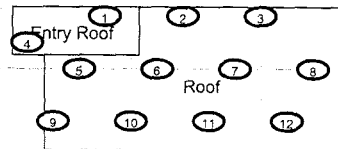
Survey Point #	Alpha RSA	Alpha TSA	Beta RSA	Beta TSA
1	0.0	36.0	19.6	0.0
2	0.0	78.0	11.6	0.0
3	0.0	54.0	0.0	0.0
4	0.0	48.0	0.0	294.0
5	4.5	72.0	0.0	0.0
6	0.0	54.0	35.6	0.0
7	0.0	42.0	0.0	0.0
8	0.0	54.0	0.0	0.0
9	1.5	42.0	19.6	0.0
10	1.5	54.0	0.0	0.0
11	0.0	24.0	0.0	0.0
12	1.5	72.0	0.0	0.0
13	0.0	18.0	0.0	0.0
14	0.0	42.0	0.0	0.0
15	0.0	42.0	7.6	0.0
16	1.5	54.0	0.0	0.0
17	0.0	102.0	0.0	0.0
18	1.5	18.0	0.0	0.0
19	0.0	72.0	0.0	0.0
20	0.0	12.0	0.0	0.0
21	0.0	24.0	0.0	0.0
22	0.0	36.0	11.6	0.0
23	0.0	72.0	0.0	0.0
24	0.0	90.0	0.0	0.0
25	7.5	66.0	11.6	0.0
26	0.0	30.0	0.0	0.0
27	0.0	54.0	0.0	0.0
28	4.5	30.0	0.0	51.0
29	1.5	72.0	0.0	0.0
30	0.0	54.0	0.0	0.0

All survey points are on the exterior surfaces (i.e., walls and roof). RSA and TSA = Removable and Total Surface Activity respectively.

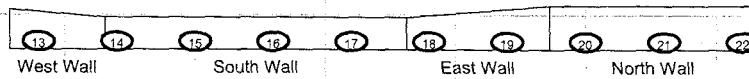
RLC SURVEY FOR B559 CLUSTER

Survey Area: H Survey Unit: N/A Type: 2
 Building: 528
 Survey Unit Description: N/A
 Total Area: 140 sq. m. Total Floor Area: 66 sq. m.

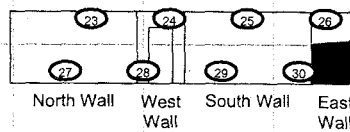
Building 528



Main Building Walls



Entry Walls

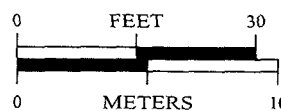


SURVEY MAP LEGEND

- ① Smear & TSA Location
- ② Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

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Scan Survey Information
 Survey Instrument ID #(s):
 RCT ID #(s):



1 inch = 24 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
 Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 Prepared for:

DynCorp
 THE ART OF TECHNOLOGY



MAP ID: fy02-0045/B528

January 16, 2002

000-0-001

PAGE 1 OF 1

B559

PAINT

SAMPLE

DATA

COVER PAGE

Sanford Cohen & Associates
Southeastern Environmental Laboratory
1000 Monticello Court
Montgomery, Alabama 36117

Laboratory Code: SCA

Subcontract Number: KH700325EP6

RIN: 02D0267
LIC: RC01B004

Laboratory Report Identification Code: 2752, 2753

Sample Matrix: Waste

Site Sample Numbers	Laboratory Sample Number		
	Uranium	Plutonium	Americium
02D0267-001.002 559 RM 102	KH101-2752-01	KH101-2752-01	KH101-2752-01
02D0267-002.002 559 RM 102	KH101-2752-02	KH101-2752-02	KH101-2752-02
02D0267-003.002 559 RM 103	KH101-2752-03	KH101-2752-03	KH101-2752-03
02D0267-004.002 559 RM 101	KH101-2752-04	KH101-2752-04	KH101-2752-04
02D0267-005.002 559 RM 101	KH101-2752-05	KH101-2752-05	KH101-2752-05
02D0267-006.002 559 RM 101	KH101-2752-06	KH101-2752-06	KH101-2752-06
02D0267-007.002 559 RM 103E	KH101-2752-07	KH101-2752-07	KH101-2752-07
02D0267-008.002 559 RM 104	KH101-2752-08	KH101-2752-08	KH101-2752-08
02D0267-009.002 559 RM 103D	KH101-2752-09	KH101-2752-09	KH101-2752-09
02D0267-010.002 559 RM 103	KH101-2752-10	KH101-2752-10	KH101-2752-10
Laboratory Control Sample	SCAQC-2752-LC1	SCAQC-2752-LC1	SCAQC-2752-LC1
Duplicate (LD)	SCAQC-2752-LD1	SCAQC-2752-LD1	SCAQC-2752-LD1
Preparation Blank (PB)	SCAQC-2752-PB	SCAQC-2752-PB	SCAQC-2752-PB

COVER PAGE (cont.)

Sanford Cohen & Associates
Southeastern Environmental Laboratory
1000 Monticello Court
Montgomery, Alabama 36117

Laboratory Code: SCA

Subcontract Number: KH700325EP6

RIN: 02D0267

LIC: RC01B004


Laboratory Report Identification Code: 2752, 2753

Sample Matrix: Waste

Site Sample Numbers	Laboratory Sample Number		
	Uranium	Plutonium	Americium
02D0267-011.002 559 RM 101	KH101-2753-01	KH101-2753-01	KH101-2753-01
02D0267-012.002 559 RM 103D	KH101-2753-02	KH101-2753-02	KH101-2753-02
02D0267-013.001 559	KH101-2753-03	KH101-2753-03	KH101-2753-03
02D0267-014.001 559	KH101-2753-04	KH101-2753-04	KH101-2753-04
02D0267-015.001 559	KH101-2753-05	KH101-2753-05	KH101-2753-05
02D0267-016.001 559	KH101-2753-06	KH101-2753-06	KH101-2753-06
02D0267-017.001 559	KH101-2753-07	KH101-2753-07	KH101-2753-07
Laboratory Control Sample	SCAQC-2753-LC1	SCAQC-2753-LC1	SCAQC-2753-LC1
Duplicate (LD)	SCAQC-2753-LD1	SCAQC-2753-LD1	SCAQC-2753-LD1
Preparation Blank (PB)	SCAQC-2753-PB	SCAQC-2753-PB	SCAQC-2753-PB

Comments: There were no problems encountered during sample receiving.

"I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy sample data package and the computer-readable EDD, as applicable, submitted on diskette or by modem, has been authorized by the laboratory Manager or the Manager's designee, as verified by the following signature."


Signature

Joe Stinson
Name

Laboratory Manager
Title

12/27/01
Date

Sanford Cohen & Associates
Southeastern Environmental Laboratory

Radioanalytical Results

Report Identification Number: 02D0267

Project Name: <u>Kaiser-Hill</u>	Chain-of-Custody Number: <u>02D0267#001</u>	Matrix: <u>Waste</u>
ite Sample ID: <u>001.002</u>		
Other Sample ID: <u>559 ROOM 102</u>	Collection Date: <u>12/12/01</u>	Date Received: <u>12/18/01</u>
	Batch Number: <u>2752</u>	Laboratory Code: <u>SCA</u>

Method Number	Radionuclide	Laboratory Sample ID	Activity (pCi/g)	2 σ Counting Error (pCi/g)	Total Error (pCi/g)	MDA (pCi/g)
ACW03	U-233/234	KH101-2752-01	0.584	0.273	0.297	0.143
ACW03	U-235	KH101-2752-01	-0.022	0.094	0.094	0.252
ACW03	U-238	KH101-2752-01	0.640	0.285	0.313	0.142
ACW03	PU-238	KH101-2752-01	0.322	0.208	0.218	0.087
ACW03	PU-239/240	KH101-2752-01	0.580	0.283	0.306	0.087
ACW03	AM-241	KH101-2752-01	0.310	0.211	0.220	0.093

Quality Control Samples			
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)
U	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Pu	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Am	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB

Sanford Cohen & Associates
Southeastern Environmental Laboratory

Radioanalytical Results

Report Identification Number: 02D0267

Project Name: <u>Kaiser-Hill</u>	Chain-of-Custody Number: <u>02D0267#001</u>	Matrix: <u>Waste</u>
Sample ID: <u>002.002</u>		
Other Sample ID: <u>559 ROOM 102</u>	Collection Date: <u>12/12/01</u>	Date Received: <u>12/18/01</u>
	Batch Number: <u>2752</u>	Laboratory Code: <u>SCA</u>

Method Number	Radionuclide	Laboratory Sample ID	Activity (pCi/g)	2 σ Counting Error (pCi/g)	Total Error (pCi/g)	MDA (pCi/g)
ACW03	U-233/234	KH101-2752-02	0.582	0.265	0.289	0.155
ACW03	U-235	KH101-2752-02	0.007	0.078	0.078	0.192
ACW03	U-238	KH101-2752-02	0.263	0.176	0.184	0.131
ACW03	PU-238	KH101-2752-02	0.335	0.206	0.217	0.083
ACW03	PU-239/240	KH101-2752-02	1.34	0.438	0.513	0.083
ACW03	AM-241	KH101-2752-02	0.105	0.137	0.139	0.185

Quality Control Samples			
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)
U	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Pu	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Am	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB

Sanford Cohen & Associates
Southeastern Environmental Laboratory

Radioanalytical Results

Report Identification Number: 02D0267

Project Name: <u>Kaiser-Hill</u>	Chain-of-Custody Number: <u>02D0267#001</u>	Matrix: <u>Waste</u>
ite Sample ID: <u>003.002</u>		
Other Sample ID: <u>559 ROOM 103</u>	Collection Date: <u>12/12/01</u>	Date Received: <u>12/18/01</u>
	Batch Number: <u>2752</u>	Laboratory Code: <u>SCA</u>

Method Number	Radionuclide	Laboratory Sample ID	Activity (pCi/g)	2 σ Counting Error (pCi/g)	Total Error (pCi/g)	MDA (pCi/g)
ACW03	U-233/234	KH101-2752-03	0.879	0.348	0.390	0.176
ACW03	U-235	KH101-2752-03	0.000	0.000	0.000	0.104
ACW03	U-238	KH101-2752-03	1.18	0.398	0.463	0.084
ACW03	PU-238	KH101-2752-03	0.251	0.179	0.186	0.140
ACW03	PU-239/240	KH101-2752-03	0.524	0.256	0.276	0.079
ACW03	AM-241	KH101-2752-03	0.058	0.108	0.108	0.175

Quality Control Samples			
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)
U	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Pu	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Am	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB

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Sanford Cohen & Associates
Southeastern Environmental Laboratory

Radioanalytical Results

Report Identification Number: 02D0267

Project Name: <u>Kaiser-Hill</u>	Chain-of-Custody Number: <u>02D0267#001</u>	Matrix: <u>Waste</u>
ite Sample ID: <u>004.002</u>		
Other Sample ID: <u>559 ROOM 101</u>	Collection Date: <u>12/13/01</u>	Date Received: <u>12/18/01</u>
	Batch Number: <u>2752</u>	Laboratory Code: <u>SCA</u>

Method Number	Radionuclide	Laboratory Sample ID	Activity (pCi/g)	2 σ Counting Error (pCi/g)	Total Error (pCi/g)	MDA (pCi/g)
ACW03	U-233/234	KH101-2752-04	0.858	0.340	0.381	0.149
ACW03	U-235	KH101-2752-04	0.061	0.113	0.114	0.184
ACW03	U-238	KH101-2752-04	0.836	0.332	0.371	0.084
ACW03	PU-238	KH101-2752-04	0.974	0.405	0.450	0.364
ACW03	PU-239/240	KH101-2752-04	1.30	0.411	0.487	0.131
ACW03	AM-241	KH101-2752-04	0.137	0.138	0.141	0.093

Quality Control Samples			
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)
U	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Pu	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Am	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB

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Radioanalytical Results

Report Identification Number: 02D0267

Project Name: <u>Kaiser-Hill</u>	Chain-of-Custody Number: <u>02D0267#001</u>	Matrix: <u>Waste</u>
ite Sample ID: <u>005.002</u>		
Other Sample ID: <u>559 ROOM 101</u>	Collection Date: <u>12/13/01</u>	Date Received: <u>12/18/01</u>
	Batch Number: <u>2752</u>	Laboratory Code: <u>SCA</u>

<u>Method Number</u>	<u>Radionuclide</u>	<u>Laboratory Sample ID</u>	<u>Activity (pCi/g)</u>	<u>2 σ Counting Error (pCi/g)</u>	<u>Total Error (pCi/g)</u>	<u>MDA (pCi/g)</u>
ACW03	U-233/234	KH101-2752-05	0.350	0.203	0.215	0.150
ACW03	U-235	KH101-2752-05	0.065	0.093	0.095	0.089
ACW03	U-238	KH101-2752-05	0.729	0.288	0.323	0.127
ACW03	PU-238	KH101-2752-05	3.45	0.791	1.05	0.405
ACW03	PU-239/240	KH101-2752-05	163	20.4	38.4	0.160
ACW03	AM-241	KH101-2752-05	29.2	4.50	7.37	0.166

<u>Quality Control Samples</u>			
<u>Radionuclide</u>	<u>Laboratory Control Sample (LC)</u>	<u>Laboratory Duplicate Analysis (LD)</u>	<u>Preparation Blank (PB)</u>
U	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Pu	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Am	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB

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Radioanalytical Results

Report Identification Number: 02D0267

Project Name: <u>Kaiser-Hill</u>	Chain-of-Custody Number: <u>02D0267#001</u>	Matrix: <u>Waste</u>
ite Sample ID: <u>006.002</u>		
Other Sample ID: <u>559 ROOM 102</u>	Collection Date: <u>12/13/01</u>	Date Received: <u>12/18/01</u>
	Batch Number: <u>2752</u>	Laboratory Code: <u>SCA</u>

<u>Method Number</u>	<u>Radionuclide</u>	<u>Laboratory Sample ID</u>	<u>Activity (pCi/g)</u>	<u>2 σ Counting Error (pCi/g)</u>	<u>Total Error (pCi/g)</u>	<u>MDA (pCi/g)</u>
ACW03	U-233/234	KH101-2752-06	0.531	0.242	0.264	0.072
ACW03	U-235	KH101-2752-06	-0.013	0.026	0.027	0.157
ACW03	U-238	KH101-2752-06	0.560	0.254	0.278	0.149
ACW03	PU-238	KH101-2752-06	0.388	0.291	0.301	0.354
ACW03	PU-239/240	KH101-2752-06	3.16	0.691	0.936	0.127
ACW03	AM-241	KH101-2752-06	0.847	0.351	0.390	0.088

<u>Quality Control Samples</u>			
<u>Radionuclide</u>	<u>Laboratory Control Sample (LC)</u>	<u>Laboratory Duplicate Analysis (LD)</u>	<u>Preparation Blank (PB)</u>
U	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Pu	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Am	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB

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Radioanalytical Results

Report Identification Number: 02D0267

Project Name: <u>Kaiser-Hill</u>	Chain-of-Custody Number: <u>02D0267#001</u>	Matrix: <u>Waste</u>
ite Sample ID: <u>007.002</u>		
Other Sample ID: <u>559 ROOM 103E</u>	Collection Date: <u>12/12/01</u>	Date Received: <u>12/18/01</u>
	Batch Number: <u>2752</u>	Laboratory Code: <u>SCA</u>

<u>Method Number</u>	<u>Radionuclide</u>	<u>Laboratory Sample ID</u>	<u>Activity (pCi/g)</u>	<u>2 σ Counting Error (pCi/g)</u>	<u>Total Error (pCi/g)</u>	<u>MDA (pCi/g)</u>
ACW03	U-233/234	KH101-2752-07	17.6	2.07	4.09	0.204
ACW03	U-235	KH101-2752-07	0.129	0.129	0.135	0.087
ACW03	U-238	KH101-2752-07	0.692	0.278	0.310	0.125
ACW03	PU-238	KH101-2752-07	530	61.5	123	0.121
ACW03	PU-239/240	KH101-2752-07	398	46.3	92.1	0.121
ACW03	AM-241	KH101-2752-07	51.1	7.20	12.5	0.176

<u>Quality Control Samples</u>			
<u>Radionuclide</u>	<u>Laboratory Control Sample (LC)</u>	<u>Laboratory Duplicate Analysis (LD)</u>	<u>Preparation Blank (PB)</u>
U	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Pu	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Am	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB

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Radioanalytical Results

Report Identification Number: 02D0267

Project Name: <u>Kaiser-Hill</u>	Chain-of-Custody Number: <u>02D0267#001</u>	Matrix: <u>Waste</u>
ite Sample ID: <u>008.002</u>		
Other Sample ID: <u>559 ROOM 104</u>	Collection Date: <u>12/12/01</u>	Date Received: <u>12/18/01</u>
	Batch Number: <u>2752</u>	Laboratory Code: <u>SCA</u>

<u>Method Number</u>	<u>Radionuclide</u>	<u>Laboratory Sample ID</u>	<u>Activity (pCi/g)</u>	<u>2 σ Counting Error (pCi/g)</u>	<u>Total Error (pCi/g)</u>	<u>MDA (pCi/g)</u>
ACW03	U-233/234	KH101-2752-08	0.657	0.280	0.309	0.133
ACW03	U-235	KH101-2752-08	0.014	0.112	0.112	0.236
ACW03	U-238	KH101-2752-08	0.765	0.302	0.339	0.133
ACW03	PU-238	KH101-2752-08	0.075	0.103	0.104	0.139
ACW03	PU-239/240	KH101-2752-08	0.723	0.303	0.336	0.078
ACW03	AM-241	KH101-2752-08	0.310	0.210	0.219	0.155

<u>Quality Control Samples</u>			
<u>Radionuclide</u>	<u>Laboratory Control Sample (LC)</u>	<u>Laboratory Duplicate Analysis (LD)</u>	<u>Preparation Blank (PB)</u>
U	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Pu	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Am	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB

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Radioanalytical Results

Report Identification Number: 02D0267

Project Name: <u>Kaiser-Hill</u>	Chain-of-Custody Number: <u>02D0267#001</u>	Matrix: <u>Waste</u>
ite Sample ID: <u>009.002</u>		
Other Sample ID: <u>559 ROOM 103D</u>	Collection Date: <u>12/12/01</u>	Date Received: <u>12/18/01</u>
	Batch Number: <u>2752</u>	Laboratory Code: <u>SCA</u>

Method Number	Radionuclide	Laboratory Sample ID	Activity (pCi/g)	2 σ Counting Error (pCi/g)	Total Error (pCi/g)	MDA (pCi/g)
ACW03	U-233/234	KH101-2752-09	2.06	0.507	0.653	0.151
ACW03	U-235	KH101-2752-09	0.237	0.191	0.204	0.186
ACW03	U-238	KH101-2752-09	9.28	1.30	2.26	0.127
ACW03	PU-238	KH101-2752-09	0.929	0.366	0.410	0.087
ACW03	PU-239/240	KH101-2752-09	11.2	1.89	2.93	0.202
ACW03	AM-241	KH101-2752-09	2.19	0.644	0.779	0.099

Quality Control Samples			
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)
U	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Pu	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Am	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB

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Radioanalytical Results

Report Identification Number: 02D0267

Project Name: <u>Kaiser-Hill</u>	Chain-of-Custody Number: <u>02D0267#001</u>	Matrix: <u>Waste</u>
ite Sample ID: <u>010.002</u>		
Other Sample ID: <u>559 ROOM 103</u>	Collection Date: <u>12/12/01</u>	Date Received: <u>12/18/01</u>
	Batch Number: <u>2752</u>	Laboratory Code: <u>SCA</u>

<u>Method Number</u>	<u>Radionuclide</u>	<u>Laboratory Sample ID</u>	<u>Activity (pCi/g)</u>	<u>2 σ Counting Error (pCi/g)</u>	<u>Total Error (pCi/g)</u>	<u>MDA (pCi/g)</u>
ACW03	U-233/234	KH101-2752-10	1.07	0.360	0.419	0.155
ACW03	U-235	KH101-2752-10	0.034	0.068	0.068	0.092
ACW03	U-238	KH101-2752-10	0.682	0.279	0.311	0.074
ACW03	PU-238	KH101-2752-10	0.309	0.190	0.200	0.076
ACW03	PU-239/240	KH101-2752-10	0.618	0.274	0.301	0.076
ACW03	AM-241	KH101-2752-10	0.055	0.102	0.102	0.166

<u>Quality Control Samples</u>			
<u>Radionuclide</u>	<u>Laboratory Control Sample (LC)</u>	<u>Laboratory Duplicate Analysis (LD)</u>	<u>Preparation Blank (PB)</u>
U	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Pu	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB
Am	SCAQC-2752-LC1	SCAQC-2752-LD1	SCAQC-2752-PB

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Radioanalytical Results

Report Identification Number: 02D0267

Project Name: <u>Kaiser-Hill</u>	Chain-of-Custody Number: <u>02D0267#001</u>	Matrix: <u>Waste</u>
ite Sample ID: <u>011.002</u>		
Other Sample ID: <u>559 ROOM 101</u>	Collection Date: <u>12/13/01</u>	Date Received: <u>12/18/01</u>
	Batch Number: <u>2753</u>	Laboratory Code: <u>SCA</u>

Method Number	Radionuclide	Laboratory Sample ID	Activity (pCi/g)	2 σ Counting Error (pCi/g)	Total Error (pCi/g)	MDA (pCi/g)
ACW03	U-233/234	KH101-2753-01	0.738	0.302	0.336	0.159
ACW03	U-235	KH101-2753-01	0.070	0.099	0.101	0.094
ACW03	U-238	KH101-2753-01	1.63	0.452	0.557	0.076
ACW03	PU-238	KH101-2753-01	4.38	0.891	1.25	0.078
ACW03	PU-239/240	KH101-2753-01	222	27.8	52.3	0.078
ACW03	AM-241	KH101-2753-01	40.9	5.72	9.98	0.080

Quality Control Samples			
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)
U	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB
Pu	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB
Am	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB

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Radioanalytical Results

Report Identification Number: 02D0267

Project Name: <u>Kaiser-Hill</u>	Chain-of-Custody Number: <u>02D0267#001</u>	Matrix: <u>Waste</u>
Site Sample ID: <u>012.002</u>		
Other Sample ID: <u>559 ROOM 103D</u>	Collection Date: <u>12/12/01</u>	Date Received: <u>12/18/01</u>
	Batch Number: <u>2753</u>	Laboratory Code: <u>SCA</u>

Method Number	Radionuclide	Laboratory Sample ID	Activity (pCi/g)	2 σ Counting Error (pCi/g)	Total Error (pCi/g)	MDA (pCi/g)
ACW03	U-233/234	KH101-2753-02	2.20	0.511	0.674	0.122
ACW03	U-235	KH101-2753-02	0.081	0.112	0.114	0.150
ACW03	U-238	KH101-2753-02	11.2	1.45	2.68	0.068
ACW03	PU-238	KH101-2753-02	0.271	0.184	0.192	0.082
ACW03	PU-239/240	KH101-2753-02	6.48	1.20	1.77	0.082
ACW03	AM-241	KH101-2753-02	1.65	0.543	0.635	0.202

Quality Control Samples			
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)
U	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB
Pu	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB
Am	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB

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Radioanalytical Results

Report Identification Number: 02D0267

Project Name: <u>Kaiser-Hill</u>	Chain-of-Custody Number: <u>02D0267#001</u>	Matrix: <u>Waste</u>
ite Sample ID: <u>013.002</u>		
Other Sample ID: <u>559</u>	Collection Date: <u>12/13/01</u>	Date Received: <u>12/18/01</u>
	Batch Number: <u>2753</u>	Laboratory Code: <u>SCA</u>

<u>Method Number</u>	<u>Radionuclide</u>	<u>Laboratory Sample ID</u>	<u>Activity (pCi/g)</u>	<u>2 σ Counting Error (pCi/g)</u>	<u>Total Error (pCi/g)</u>	<u>MDA (pCi/g)</u>
ACW03	U-233/234	KH101-2753-03	0.693	0.269	0.302	0.067
ACW03	U-235	KH101-2753-03	0.000	0.000	0.000	0.083
ACW03	U-238	KH101-2753-03	0.705	0.273	0.307	0.118
ACW03	PU-238	KH101-2753-03	0.019	0.069	0.069	0.154
ACW03	PU-239/240	KH101-2753-03	0.225	0.172	0.178	0.087
ACW03	AM-241	KH101-2753-03	0.148	0.150	0.153	0.101

<u>Quality Control Samples</u>			
<u>Radionuclide</u>	<u>Laboratory Control Sample (LC)</u>	<u>Laboratory Duplicate Analysis (LD)</u>	<u>Preparation Blank (PB)</u>
U	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB
Pu	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB
Am	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB

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Radioanalytical Results

Report Identification Number: 02D0267

Project Name: <u>Kaiser-Hill</u>	Chain-of-Custody Number: <u>02D0267#001</u>	Matrix: <u>Waste</u>
ite Sample ID: <u>014.002</u>		
Other Sample ID: <u>559</u>	Collection Date: <u>12/13/01</u>	Date Received: <u>12/18/01</u>
	Batch Number: <u>2753</u>	Laboratory Code: <u>SCA</u>

Method Number	Radionuclide	Laboratory Sample ID	Activity (pCi/g)	2 σ Counting Error (pCi/g)	Total Error (pCi/g)	MDA (pCi/g)
ACW03	U-233/234	KH101-2753-04	0.531	0.236	0.259	0.069
ACW03	U-235	KH101-2753-04	0.031	0.062	0.063	0.085
ACW03	U-238	KH101-2753-04	0.654	0.263	0.294	0.068
ACW03	PU-238	KH101-2753-04	0.000	0.000	0.000	0.074
ACW03	PU-239/240	KH101-2753-04	0.109	0.110	0.112	0.074
ACW03	AM-241	KH101-2753-04	0.071	0.118	0.119	0.182

Quality Control Samples			
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)
U	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB
Pu	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB
Am	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB

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Radioanalytical Results

Report Identification Number: 02D0267

Project Name: <u>Kaiser-Hill</u>	Chain-of-Custody Number: <u>02D0267#001</u>	Matrix: <u>Waste</u>
ite Sample ID: <u>015.002</u>		
Other Sample ID: <u>559</u>	Collection Date: <u>12/13/01</u>	Date Received: <u>12/18/01</u>
	Batch Number: <u>2753</u>	Laboratory Code: <u>SCA</u>

Method Number	Radionuclide	Laboratory Sample ID	Activity (pCi/g)	2 σ Counting Error (pCi/g)	Total Error (pCi/g)	MDA (pCi/g)
ACW03	U-233/234	KH101-2753-05	0.886	0.318	0.364	0.073
ACW03	U-235	KH101-2753-05	-0.013	0.027	0.027	0.159
ACW03	U-238	KH101-2753-05	1.10	0.356	0.418	0.072
ACW03	PU-238	KH101-2753-05	0.051	0.094	0.094	0.152
ACW03	PU-239/240	KH101-2753-05	5.13	1.04	1.46	0.086
ACW03	AM-241	KH101-2753-05	0.573	0.288	0.310	0.156

Quality Control Samples			
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)
U	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB
Pu	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB
Am	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB

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Radioanalytical Results

Report Identification Number: 02D0267

Project Name: <u>Kaiser-Hill</u>	Chain-of-Custody Number: <u>02D0267#001</u>	Matrix: <u>Waste</u>
ite Sample ID: <u>016.002</u>		
Other Sample ID: <u>559</u>	Collection Date: <u>12/13/01</u>	Date Received: <u>12/18/01</u>
	Batch Number: <u>2753</u>	Laboratory Code: <u>SCA</u>

Method Number	Radionuclide	Laboratory Sample ID	Activity (pCi/g)	2 σ Counting Error (pCi/g)	Total Error (pCi/g)	MDA (pCi/g)
ACW03	U-233/234	KH101-2753-06	0.474	0.227	0.246	0.122
ACW03	U-235	KH101-2753-06	0.063	0.089	0.091	0.085
ACW03	U-238	KH101-2753-06	0.675	0.271	0.303	0.122
ACW03	PU-238	KH101-2753-06	0.283	0.192	0.200	0.085
ACW03	PU-239/240	KH101-2753-06	13.0	2.09	3.34	0.085
ACW03	AM-241	KH101-2753-06	1.00	0.378	0.428	0.085

Quality Control Samples			
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)
U	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB
Pu	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB
Am	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB

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Radioanalytical Results

Report Identification Number: 02D0267

Project Name: <u>Kaiser-Hill</u>	Chain-of-Custody Number: <u>02D0267#001</u>	Matrix: <u>Waste</u>
Site Sample ID: <u>017.002</u>		
Other Sample ID: <u>559</u>	Collection Date: <u>12/13/01</u>	Date Received: <u>12/18/01</u>
	Batch Number: <u>2753</u>	Laboratory Code: <u>SCA</u>

Method Number	Radionuclide	Laboratory Sample ID	Activity (pCi/g)	2 σ Counting Error (pCi/g)	Total Error (pCi/g)	MDA (pCi/g)
ACW03	U-233/234	KH101-2753-07	0.652	0.267	0.297	0.071
ACW03	U-235	KH101-2753-07	0.032	0.064	0.065	0.087
ACW03	U-238	KH101-2753-07	1.18	0.368	0.438	0.124
ACW03	PU-238	KH101-2753-07	0.018	0.066	0.066	0.146
ACW03	PU-239/240	KH101-2753-07	0.092	0.107	0.108	0.083
ACW03	AM-241	KH101-2753-07	0.098	0.128	0.129	0.172

Quality Control Samples			
Radionuclide	Laboratory Control Sample (LC)	Laboratory Duplicate Analysis (LD)	Preparation Blank (PB)
U	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB
Pu	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB
Am	SCAQC-2753-LC1	SCAQC-2753-LD1	SCAQC-2753-PB

ATTACHMENT D

Chemical Data Summaries and Sample Maps

Table D-1 Beryllium Data Summary, Building 559

Sample Number	Sample Location	Result ($\mu\text{g}/100\text{ cm}^2$)
559-10312001-214-001	Room 128, Top of Cabinet	<0.1
559-10312001-214-002	Room 121, Floor	<0.1
559-10312001-214-003	Hallway, Floor	<0.1
559-10312001-214-004	Room 103E, Top of Plasma Quad	<0.1
559-10312001-214-005	Room 101, Floor	<0.1
559-10312001-214-006	Room 101, Floor	<0.1
559-10312001-214-007	Room 101, Floor	<0.1
559-10312001-214-008	Room 134, Floor	<0.1
559-10312001-214-009	Room 102, Floor	<0.1
559-10312001-214-010	Room 115, Floor	<0.1
559-10312001-214-011	Room 102, Floor	<0.1
559-10312001-214-012	Room 115, Desk top	<0.1
559-10312001-214-013	Room 101, Floor	<0.1
559-10312001-214-014	Room 103, Floor	<0.1
559-10312001-214-015	Room 109, Floor	<0.1
559-10312001-214-016	Room 129, Top of Ventilation Fan	<0.1
559-10312001-214-017	Room 102, Top of Bookshelf	<0.1
559-10312001-214-018	Room 101A, Top of Computer Frame	<0.1
559-10312001-214-019	Room 101, Floor	<0.1
559-10312001-214-020	Room 129z, Floor, Airlock Entrance	<0.1
559-10312001-214-021	Room 121, Floor	<0.1
559-10312001-214-022	Room 109, Floor	<0.1
559-10312001-214-023	Room 129, Top of Mass Spec Tank	<0.1
559-10312001-214-024	Hallway, Floor	<0.1
559-10312001-214-025	Room 103, Top of Glove Box M-41	<0.1
559-10312001-214-026	Room 120, Floor	<0.1
559-10312001-214-027	Room 129, Top of Ventilation System Filter Plenum	<0.1
559-10312001-214-028	Room 102, Top of Marble Table	<0.1
559-10312001-214-029	Room 101, Floor	<0.1
559-10312001-214-030	Room 128, Top of Network Cable Panel	<0.1
559-10312001-214-031	Room 101, Floor	<0.1

Sample Number	Sample Location	Result ($\mu\text{g}/100\text{ cm}^2$)
559-10312001-214-032	Room 102, Top of Box C-34	<0.1
559-10312001-214-033	Room 125, Floor	<0.1
559-10312001-214-034	Room 129, Top of Control Panel	<0.1
559-10312001-214-035	Room 129A, Top of Cabinet	<0.1
559-10312001-214-036	Dock, Floor	<0.1
559-10312001-214-037	Room 130, Floor	<0.1
559-10312001-214-038	Room 103, Top of M-16 Conveyor	<0.1
559-10312001-214-039	Room. 129, Top of Bottle Rack Storage	<0.1
559-10312001-214-040	Room 129, Top of Storage Cabinet	<0.1
559-10312001-214-041	Room 129B, Floor	<0.1
559-10312001-214-042	Room 129A, Top of Cabinet	<0.1
559-10312001-214-043	Room 103, Floor	<0.1
559-10312001-214-044	Room 101/102 Doorway Floor	<0.1
559-10312001-214-045	Room 103, Top of M-29 Box	<0.1
559-10312001-214-046	Room 129, Floor	<0.1
559-10312001-214-047	Room 101, Floor	<0.1
559-10312001-214-048	Room 122A, Floor	<0.1
559-10312001-214-049	Room 102, Top of Box C-28	<0.1
559-10312001-214-050	Room 129, Top of 559 Fan Housing	<0.1
559-10312001-214-051	Room 129, Floor	<0.1
559-10312001-214-052	Room 108, Floor	<0.1
559-10312001-214-053	Room 124A, Top of Book Shelf	<0.1
559-10312001-214-054	Room 101, Top of B-Box M-3	<0.1
559-10312001-214-055	Room 102, Floor	<0.1
559-10312001-214-056	Room 129, Floor	<0.1
559-10312001-214-057	Room 129, Floor	<0.1
559-10312001-214-058	Room 102, Top of B-Box C-44	<0.1
559-10312001-214-059	Room 103, Floor	<0.1
559-10312001-214-060	Room 102, Top of CAM	<0.1
559-10312001-214-061	Room 122, Floor	<0.1
559-10312001-214-062	Room 102, Top of Lab Refrigerator	<0.1
559-10312001-214-063	Hallway, Floor	<0.1
559-10312001-214-064	Room 129B, Floor	<0.1
559-10312001-214-065	Room 103, Desktop	<0.1

Sample Number	Sample Location	Result ($\mu\text{g}/100\text{ cm}^2$)
559-10312001-214-066	Room 129, Top of Ventilation System Fan	<0.1
559-10312001-214-067	Room 135, Floor	<0.1
559-10312001-214-068	Dock, Floor	<0.1
559-10312001-214-069	Room 132A, Top of Locker	<0.1
559-10312001-214-070	Room 103, Top of M-16 Conveyor	<0.1
559-10312001-214-071	Room 101, Floor	<0.1
559-10312001-214-072	Room 109, Top of the Scale	<0.1
559-10312001-214-073	Room 129, Work Bench	<0.1
559-10312001-214-074	Room 103, Floor	<0.1
559-10312001-214-075	Room 124B, Floor	<0.1
559-10312001-214-076	Room 129, Top of 300 Room Exhaust (Near Room 130)	<0.1
559-10312001-214-077	Room 129, Top of Light Fixture	<0.1
559-10312001-214-078	Room 129, Top of Steam Line, NW Corner	<0.1
559-10312001-214-079	Room 129, Top of Electric Panel, NE Corner	<0.1
559-10312001-214-080	Room 129, Top of 559 Ventilation System Filter Plenum	<0.1
559-10312001-214-081	Room 129, Mezz, Top of Bookshelf # 2	<0.1
559-10312001-214-082	Room 129, Mezz, Top of Bookshelf # 6	<0.1
559-10312001-214-083	Room 106, Above Ceiling Tile	<0.1
559-10312001-214-084	Hallway, Above Ceiling Tile	<0.1
559-10312001-214-085	Room, 135, Above Ductwork, SW Corner	<0.1
559-10312001-214-086	Room 103E, Top of M-32 Box	<0.1
559-10312001-214-087	Room 103E, Top of Light Fixture	<0.1
559-10312001-214-088	Room 103, Top of Room 103 D Ceiling	<0.1
559-10312001-214-089	Room 103, Top of Light Fixture	<0.1
559-10312001-214-090	Room 103, Top of Ceiling Welding Receptacle, E-8	<0.1
559-10312001-214-091	Room 120, Top of Box C-45D	<0.1
559-10312001-214-092	Room 102, Top of Box C-46A	<0.1
559-10312001-214-093	Room 101, Top of Elevated Wooden Work Platform	<0.1
559-10312001-214-094	Room 101E, On Top of Ceiling	<0.1
559-10312001-214-095	Room 101, Top of E-12 Box	<0.1
559-10312001-214-096	Room 101, Top of E-13 Box	<0.1
559-10312001-214-097	Room 101, Top of Glove Box Exhaust Line (Above Box E-12)	<0.1
559-10312001-214-098	Room 101, Top of Hood MH-2	<0.1
559-10312001-214-099	Room 101C, Top of Cinderblock Above Doorway	<0.1

Sample Number	Sample Location	Result (ug/100 cm ²)
559-10312001-214-100	Room 101D, Outside Face Lip on Hood EH-9	<0.1
559-10312001-214-101	Blank	<0.1
559-10312001-214-102	Blank	<0.1
559-10312001-214-103	Blank	<0.1
559-10312001-214-104	Blank	<0.1
559-10312001-214-105	Blank	<0.1
559-10312001-214-106	Blank	<0.1
559-10312001-214-107	Blank	<0.1
559-10312001-214-108	Blank	<0.1
559-10312001-214-109	Blank	<0.1
559-10312001-214-110	Blank	<0.1

Table D-2 Beryllium Data Summary, Building 561

Sample Number	Sample Location	Result (ug/100 cm ²)
561-10232001-214-001	Room 101, Floor	<0.1
561-10232001-214-002	Room 101, Floor	<0.1
561-10232001-214-003	Room 101, Floor	<0.1
561-10232001-214-004	Room 101, Top of 561 FP-302 Ventilation System	<0.1
561-10232001-214-005	Room 101, Top of 561 FP-302 Ventilation System	<0.1
561-10232001-214-006	Room 101, Floor	<0.1
561-10232001-214-007	Room 101, Floor	<0.1
561-10232001-214-008	Room 101, Top of 561 FP-302 Ventilation System	<0.1
561-10232001-214-009	Room 101, Top of Tank 301	<0.1
561-10232001-214-010	Room 101, Floor	<0.1
561-10232001-214-011	Room 101, Top of 561 FP-302 Ventilation System	<0.1
561-10232001-214-012	Room 101, Floor	<0.1
561-10232001-214-013	Room 101, Top of 480v Switch Gear	<0.1
561-10232001-214-014	Room 101, Floor	<0.1
561-10232001-214-015	Room 101, Top of 561 FP-302 Ventilation System	<0.1
561-10232001-214-016	Room 101, Floor	<0.1
561-10232001-214-017	Room 101, Top of 561 FP-302 Ventilation System	<0.1

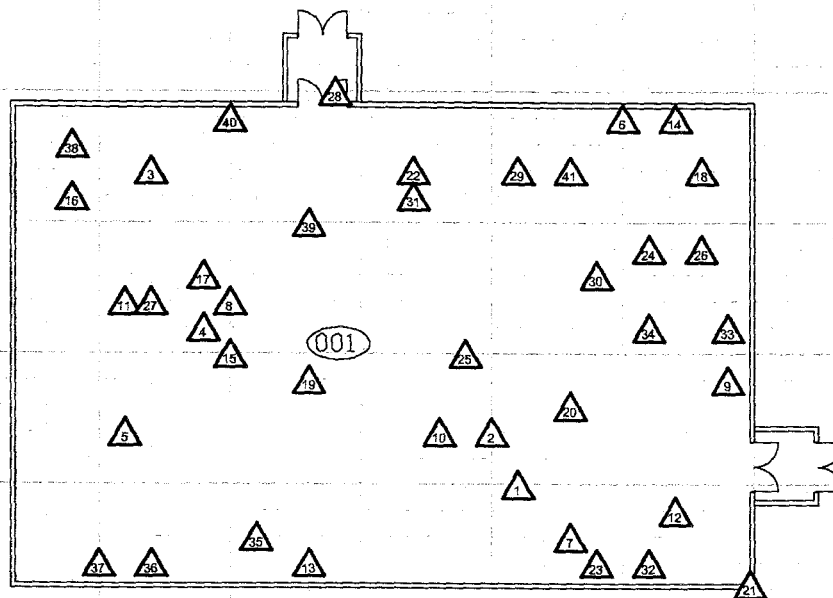
Sample Number	Sample Location	Result (ug/100 cm ²)
561-10232001-214-018	Room 101, Floor	< 0.1
561-10232001-214-019	Room 101, Floor	< 0.1
561-10232001-214-020	Room 101, Top of 561 FP-300 Ventilation System	< 0.1
561-10232001-214-021	Room 101, Floor	< 0.1
561-10232001-214-022	Room 101, Floor	< 0.1
561-10232001-214-023	Room 101, Top of Electrical Control Panel	< 0.1
561-10232001-214-024	Room 101, Floor	< 0.1
561-10232001-214-025	Room 101, Floor	< 0.1
561-10232001-214-026	Room 101, Floor	< 0.1
561-10232001-214-027	Room, Top of 561 FP-302 Ventilation System	< 0.1
561-10232001-214-028	Room 101, Floor	< 0.1
561-10232001-214-029	Room 101, Floor	< 0.1
561-10232001-214-030	Room 101, Top of Tank 301	< 0.1
561-10232001-214-031	Room 101, Floor	< 0.1
561-10232001-214-032	Room 101, Light Fixture @ 375089 Fire Panel	< 0.1
561-10232001-214-033	Room 101, Top of Panel LPP61A	< 0.1
561-10232001-214-034	Room 101, Top of 561-FP-300 Filter Plenum	< 0.1
561-10232001-214-035	Room 101, F301-A Fan Encasing	< 0.1
561-10232001-214-036	Room 101, Light Fixture, SW Corner @ Criticality Alarm	< 0.1
561-10232001-214-037	Room 101, Top of Flammable Storage Cabinet, SW Corner	< 0.1
561-10232001-214-038	Room 101, Top of 561 HCS-305, Ventilation System	< 0.1
561-10232001-214-039	Room 101, Top of 301 Normal Hood Exhaust	< 0.1
561-10232001-214-040	Room 101, Floor at Air Intake, North Side	< 0.1
561-10232001-214-041	Room 101, Top of 300 Room Exhaust	< 0.1
561-10232001-214-042	Blank	< 0.1
561-10232001-214-043	Blank	< 0.1
561-10232001-214-044	Blank	< 0.1
561-10232001-214-045	Blank	< 0.1

Table D-3 Beryllium Data Summary, Building 528

Sample Number	Sample Location	Result ($\mu\text{g}/100\text{ cm}^2$)
528-10102001-214-001	Base of Stairway	< 0.1
528-10102001-214-002	Floor Under Duct Heater Disconnect	< 0.1
528-10102001-214-003	Floor, South Wall	< 0.1
528-10102001-214-004	Floor at Valve 2420	< 0.1
528-10102001-214-005	Floor, South Wall	< 0.1
528-10102001-214-006	Floor, North Wall	< 0.1
528-10102001-214-007	Top of Supply Intake	< 0.1
528-10102001-214-008	Floor	< 0.1
528-10102001-214-009	Top of Filter Plenum	< 0.1
528-10102001-214-010	20, 17 Floor, East Wall	< 0.1
528-10102001-214-011	Top of Tank # 2, North Side	< 0.1
528-10102001-214-012	Top of Heater, Second Level	< 0.1
528-10102001-214-013	Floor at Top of Access Ladder, Second Level, South Side	< 0.1
528-10102001-214-014	Blank	< 0.1

CHEMICAL SAMPLE MAP

Building: 561



BLDG 561 FLOOR PLAN

Samples numbered
561-10232001-214-001
through
561-10232001-214-041

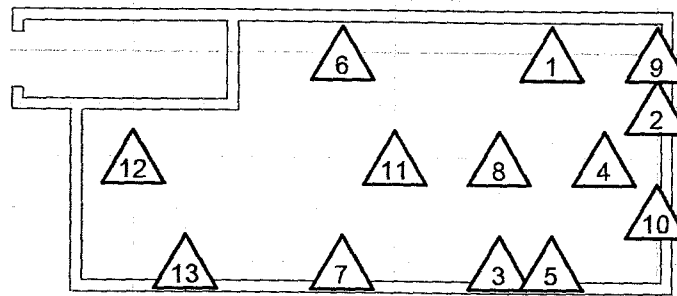
SURVEY MAP LEGEND <ul style="list-style-type: none">Asbestos Sample LocationBeryllium Sample LocationLead Sample LocationRCRA/CERCLA Sample LocationPCB Sample Location	<p>Neither the United States Government nor Kaiser Hill Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.</p> <p>Open/Inaccessible Area</p> <p>Area in Another Survey Unit</p>	<p>0 30</p> <p>FEET</p> <p>0 10</p> <p>METERS</p> <p>1 inch = 24 feet 1 grid sq. = 1 sq. m.</p>	<p>U.S. Department of Energy Rocky Flats Environmental Technology Site</p> <p>Prepared by: GHS Dept. 303-868-770 Prepared for:</p> <p>DynCorp THE ART OF TECHNOLOGY</p> <p>MAP ID: fv2001/01-0981/B561-BE September 27, 2001</p>
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561-A-001

PAGE 1 OF 1

CHEMICAL SAMPLE MAP

Building: 528



BLDG 528 FLOOR PLAN

Samples numbered
528-10102001-214-001
through
528-10102001-214-013

SURVEY MAP LEGEND		U.S. Department of Energy Rocky Flats Environmental Technology Site	
Asbestos Sample Location	<small>Neither the United States Government nor Kvaerner H&E Co., nor DynCorp I&ET, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.</small>		
Beryllium Sample Location			
Lead Sample Location			
RCRA/CERCLA Sample Location			
PCB Sample Location			
Open/Inaccessible Area	Area in Another Survey Unit	<div><div>DynCorp THE ART OF TECHNOLOGY</div><div>MAP ID: fy2001/01-0961/B528-BE September 25, 2001</div></div>	

528-A-001

PAGE 1 OF 1

Table D-4 RCRA Metals Data Summary, Building 559

Sample Number	Sample Location	Result
02D0267-001.001 (FS-1)	Rm. 102, NW corner, floor	Below RCRA Limits
02D0267-002.001 (FS-2)	Rm. 102, SW corner, floor	Below RCRA Limits
02D0267-003.001 (FS-3)	Rm. 103, N center of room, floor	Below RCRA Limits
02D0267-004.001 (FS-4)	Rm. 101, SE corner, floor	Below RCRA Limits
02D0267-005.001 (FS-5)	Rm. 101, Near SW corner, floor	Below RCRA Limits
02D0267-006.001 (FS-6)	Rm. 101, near floor drain at SE corner Rm. 101C	Below RCRA Limits
02D0267-007.001 (FS-7)	Rm. 103E, S center, floor.	Below RCRA Limits
02D0267-008.001 (FS-8)	Rm. 104 (airlock between Rm. 102 and 103), floor	Below RCRA Limits
02D0267-009.001 (FS-9)	Rm. 103D, floor	Below RCRA Limits
02D0267-010.001 (FS-3DUP)	Rm. 103, N center of room, floor	Below RCRA Limits
02D0267-011.001 (FS-5DUP)	Rm. 101, Near SW corner, floor	Below RCRA Limits
02D0267-012.001 (FS-9DUP)	Rm. 103D, floor	Below RCRA Limits

1. RCRA limits are presented in the table below.

RCRA Metal Regulatory Limits	
Analyte	Regulatory limit (mg/L)
Arsenic (D004)	5.0
Barium (D005)	100.0
Cadmium (D006)	1.0
Chromium (D007)	5.0
Lead (D008)	5.0
Mercury (D009)	0.2
Selenium (D010)	1.0
Silver (D011)	5.0

ATTACHMENT D - Addendum

CHEMICAL TCLP AND TOTAL DATA RESULTS

TCLP METALS
COVER PAGE - INORGANIC ANALYSIS DATA PACKAGE

Contract: KAISER - HILL, LLC. - RFETS SDG No.: 02D0267
Lab Code: STLDEN Case No.: SAS No.:
Job No.:

Sample ID.	Lab Sample No.
02D0267-001.001	D1L180146-001
02D0267-001.001S	D1L180146-001S
02D0267-001.001SD	D1L180146-001SD
02D0267-002.001	D1L180146-002
02D0267-002.001S	D1L180146-002S
02D0267-002.001SD	D1L180146-002SD
02D0267-003.001	D1L180146-003
02D0267-004.001	D1L180146-004
02D0267-005.001	D1L180146-005
02D0267-006.001	D1L180146-006
02D0267-007.001	D1L180146-007

Were ICP interelement corrections applied? Yes/No YES
Were ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Dee Kettula Name: Dee Kettula
Date: 01-03-2002 Title: Data Analyst

COVER PAGE - IN

TCLP METALS
COVER PAGE - INORGANIC ANALYSIS DATA PACKAGE

Contract: KAISER - HILL, LLC. - RFETS SDG No.: 02D0267
Lab Code: STLDEN Case No.: SAS No.:
SOW No.:

<u>Sample ID.</u>	<u>Lab Sample No.</u>
02D0267-008.001	D1L180146-008
02D0267-009.001	D1L180146-009
02D0267-010.001	D1L180146-010
02D0267-011.001	D1L180146-011
02D0267-012.001	D1L180146-012

Were ICP interelement corrections applied? Yes/No YES
Were ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Dee Kettula
Date: _____ Title: Data Analyst

KAISER-HILL LLC
TCLP Metals Analysis Data Sheet

Lab Name: STL DENVER
Lot/SDG Number: 02D0267
Matrix: WATER
% Moisture: N/A
Units: MG/L

Client Sample ID: 02D0267-001.001
Lab WorkOrder: EONFO
Lab Sample ID: D1L180146-001
Date/Time Collected: 12/12/01 19:50
Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-38-2	Arsenic	0.0047	B	0.50	1	1361415	6010B	016	12/28/01	12:44
7440-39-3	Barium	0.39	B	2.0	1	1361415	6010B	016	12/28/01	12:44
7440-43-9	Cadmium	0.00081	B	0.010	1	1361415	6010B	016	12/28/01	12:44
7440-47-3	Chromium	0.031	B	0.060	1	1361415	6010B	016	12/28/01	12:44
7439-92-1	Lead	0.0030	B	0.070	1	1361415	6010B	016	12/28/01	12:44
7782-49-2	Selenium	0.0092	B	0.050	1	1361415	6010B	016	12/28/01	12:44
7440-22-4	Silver	0.00047	U	0.14	1	1361417	6010B	016	12/28/01	10:34

U Result is less than the reporting limit. (RL)
B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC
TCLP Metals Analysis Data Sheet

Lab Name: STL DENVER Client Sample ID: 02D0267-001.001
 Lot/SDG Number: 02D0267 Lab WorkOrder: EONFO
 Matrix: WATER Lab Sample ID: DIL180146-001
 % Moisture: N/A Date/Time Collected: 12/12/01 19:50
 Units: MG/L Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	0.00077	B	0.0020	1	1358107	7470A	018	12/26/01	18:42

U Result is less than the reporting limit (RL)
 B Estimated result. Result is less than RL and greater than or equal to the IDL.

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KAISER-HILL LLC
TCLP Metals Analysis Data Sheet

Lab Name: STL DENVER
Lot/SDG Number: 02D0267
Matrix: WATER
% Moisture: N/A
Units: MG/L

Client Sample ID: 02D0267-002.001
Lab WorkOrder: EQNEFW
Lab Sample ID: DIL180146-002
Date/Time Collected: 12/12/01 19:15
Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-38-2	Arsenic	0.0034	U	0.50	1	1361415	6010B	016	12/28/01	12:55
7440-39-3	Barium	0.71	B	2.0	1	1361415	6010B	016	12/28/01	12:55
7440-43-9	Cadmium	0.00035	U	0.010	1	1361415	6010B	016	12/28/01	12:55
7440-47-3	Chromium	0.041	B	0.060	1	1361415	6010B	016	12/28/01	12:55
7439-92-1	Lead	0.0048	B	0.070	1	1361415	6010B	016	12/28/01	12:55
7782-49-2	Selenium	0.0048	U	0.050	1	1361415	6010B	016	12/28/01	12:55
7440-22-4	Silver	0.00047	U	0.14	1	1361417	6010B	016	12/28/01	10:39

U Result is less than the reporting limit. (RL)
B Estimated result. Result is less than RL and greater than or equal to the IDL.



FS-2

KAISER-HILL LLC
TCLP Metals Analysis Data Sheet

Lab Name: STL DENVERClient Sample ID: 02D0267-002.001Lot/SDG Number: 02D0267Lab WorkOrder: EONFWMatrix: WATERLab Sample ID: D1L180146-002% Moisture: N/ADate/Time Collected: 12/12/01 19:15Units: MG/LDate/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	0.0030		0.0020	1	1358107	7470A	018	12/26/01	18:47

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

TCLP Metals Analysis Data Sheet

Lab Name: STL DENVERClient Sample ID: 02D0267-003.001Lot/SDG Number: 02D0267Lab WorkOrder: EONFXMatrix: WATERLab Sample ID: D1L180146-003% Moisture: N/ADate/Time Collected: 12/12/01 16:50Units: MG/LDate/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-38-2	Arsenic	0.0056	B	0.50	1	1361415	6010B	016	12/28/01	13:16
7440-39-3	Barium	0.83	B	2.0	1	1361415	6010B	016	12/28/01	13:16
7440-43-9	Cadmium	0.00093	B	0.010	1	1361415	6010B	016	12/28/01	13:16
7440-47-3	Chromium	0.0036	B	0.060	1	1361415	6010B	016	12/28/01	13:16
7439-92-1	Lead	0.0049	B	0.070	1	1361415	6010B	016	12/28/01	13:16
7782-49-2	Selenium	0.0065	B	0.050	1	1361415	6010B	016	12/28/01	13:16
7440-22-4	Silver	0.00047	U	0.14	1	1361417	6010B	016	12/28/01	11:00

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC
TCLP Metals Analysis Data Sheet

Lab Name: STL DENVER
Lot/SDG Number: 02D0267
Matrix: WATER
% Moisture: N/A
Units: MG/L

Client Sample ID: 02D0267-003.001
Lab WorkOrder: EONFX
Lab Sample ID: D1L180146-003
Date/Time Collected: 12/12/01 16:50
Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	0.0029		0.0020	1	1358107	7470A	018	12/26/01	18:49

U Result is less than the reporting limit. (RL)
B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC
TCLP Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-004.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EONF0

Matrix: WATER

Lab Sample ID: D1L180146-004

% Moisture: N/A

Date/Time Collected: 12/13/01 14:41

Units: MG/L

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-38-2	Arsenic	0.0034	U	0.50	1	1361415	6010B	016	12/28/01	13:21
7440-39-3	Barium	0.55	B	2.0	1	1361415	6010B	016	12/28/01	13:21
7440-43-9	Cadmium	0.00056	B	0.010	1	1361415	6010B	016	12/28/01	13:21
7440-47-3	Chromium	0.023	B	0.060	1	1361415	6010B	016	12/28/01	13:21
7439-92-1	Lead	0.0020	U	0.070	1	1361415	6010B	016	12/28/01	13:21
7782-49-2	Selenium	0.0056	B	0.050	1	1361415	6010B	016	12/28/01	13:21
7440-22-4	Silver	0.00047	U	0.14	1	1361417	6010B	016	12/28/01	11:06

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC
TCLP Metals Analysis Data Sheet

Lab Name: STL DENVER Client Sample ID: 02D0267-004.001
 Lot/SDG Number: 02D0267 Lab WorkOrder: EQNFO
 Matrix: WATER Lab Sample ID: D1L180146-004
 % Moisture: N/A Date/Time Collected: 12/13/01 14:41
 Units: MG/L Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	0.00092	B	0.0020	1	1358107	7470A	018	12/26/01	18:54

U Result is less than the reporting limit. (RL)
 B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

TCLP Metals Analysis Data Sheet

Lab Name: STL DENVERClient Sample ID: 02D0267-005.001Lot/SDG Number: 02D0267Lab WorkOrder: EQNF2Matrix: WATERLab Sample ID: D1L180146-005% Moisture: N/ADate/Time Collected: 12/13/01 15:30Units: MG/LDate/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-38-2	Arsenic	0.0034	U	0.50	1	1361415	6010B	016	12/28/01	13:37
7440-39-3	Barium	1.6	B	2.0	1	1361415	6010B	016	12/28/01	13:37
7440-43-9	Cadmium	0.0049	B	0.010	1	1361415	6010B	016	12/28/01	13:37
7440-47-3	Chromium	0.0047	B	0.060	1	1361415	6010B	016	12/28/01	13:37
7439-92-1	Lead	0.45		0.070	1	1361415	6010B	016	12/28/01	13:37
7782-49-2	Selenium	0.0053	B	0.050	1	1361415	6010B	016	12/28/01	13:37
7440-22-4	Silver	0.00047	U	0.14	1	1361417	6010B	016	12/28/01	11:19

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC
TCLP Metals Analysis Data Sheet

Lab Name: STL DENVER
Lot/SDG Number: 02D0267
Matrix: WATER
% Moisture: N/A
Units: MG/L

Client Sample ID: 02D0267-005.001
Lab WorkOrder: EONF2
Lab Sample ID: D1L180146-005
Date/Time Collected: 12/13/01 15:30
Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	0.0050		0.0020	1	1358107	7470A	018	12/26/01	18:55

U Result is less than the reporting limit. (RL)
B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC
TCLP Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-006.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EQNF3

Matrix: WATER

Lab Sample ID: D1L180146-006

% Moisture: N/A

Date/Time Collected: 12/13/01 16:25

Units: MG/L

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-38-2	Arsenic	0.0048	B	0.50	1	1361415	6010B	016	12/28/01	13:42
7440-39-3	Barium	0.94	B	2.0	1	1361415	6010B	016	12/28/01	13:42
7440-43-9	Cadmium	0.00035	U	0.010	1	1361415	6010B	016	12/28/01	13:42
7440-47-3	Chromium	0.025	B	0.060	1	1361415	6010B	016	12/28/01	13:42
7439-92-1	Lead	0.0020	U	0.070	1	1361415	6010B	016	12/28/01	13:42
7782-49-2	Selenium	0.0048	B	0.050	1	1361415	6010B	016	12/28/01	13:42
7440-22-4	Silver	0.00047	U	0.14	1	1361417	6010B	016	12/28/01	11:35

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

TCLP Metals Analysis Data Sheet

Lab Name: STL DENVERClient Sample ID: 02D0267-006.001Lot/SDG Number: 02D0267Lab WorkOrder: EQNF3Matrix: WATERLab Sample ID: D1L180146-006% Moisture: N/ADate/Time Collected: 12/13/01 16:25Units: MG/LDate/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	0.0048		0.0020	1	1358107	7470A	018	12/26/01	18:57

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

TCLP Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-007.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EONF4

Matrix: WATER

Lab Sample ID: D1L180146-007

% Moisture: N/A

Date/Time Collected: 12/12/01 15:50

Units: MG/L

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-38-2	Arsenic	0.0034	U	0.50	1	1361415	6010B	016	12/28/01	13:47
7440-39-3	Barium	0.84	B	2.0	1	1361415	6010B	016	12/28/01	13:47
7440-43-9	Cadmium	0.024		0.010	1	1361415	6010B	016	12/28/01	13:47
7440-47-3	Chromium	0.089		0.060	1	1361415	6010B	016	12/28/01	13:47
7439-92-1	Lead	0.050	B	0.070	1	1361415	6010B	016	12/28/01	13:47
7782-49-2	Selenium	0.0053	B	0.050	1	1361415	6010B	016	12/28/01	13:47
7440-22-4	Silver	0.00047	U	0.14	1	1361417	6010B	016	12/28/01	11:41

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.



FS-7

KAISER-HILL LLC
TCLP Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-007.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EONF4

Matrix: WATER

Lab Sample ID: D1L180146-007

% Moisture: N/A

Date/Time Collected: 12/12/01 15:50

Units: MG/L

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	0.0069		0.0020	1	1358107	7470A	018	12/26/01	18:59

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC
TCLP Metals Analysis Data SheetLab Name: STL DENVERClient Sample ID: 02D0267-008.001Lot/SDG Number: 02D0267Lab WorkOrder: EQNF5Matrix: WATERLab Sample ID: D1L180146-008% Moisture: N/ADate/Time Collected: 12/12/01 18:45Units: MG/LDate/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-38-2	Arsenic	0.0046	B	0.50	1	1361415	6010B	016	12/28/01	13:53
7440-39-3	Barium	0.72	B	2.0	1	1361415	6010B	016	12/28/01	13:53
7440-43-9	Cadmium	0.00049	B	0.010	1	1361415	6010B	016	12/28/01	13:53
7440-47-3	Chromium	0.012	B	0.060	1	1361415	6010B	016	12/28/01	13:53
7439-92-1	Lead	0.0020	U	0.070	1	1361415	6010B	016	12/28/01	13:53
7782-49-2	Selenium	0.0059	B	0.050	1	1361415	6010B	016	12/28/01	13:53
7440-22-4	Silver	0.00047	U	0.14	1	1361417	6010B	016	12/28/01	11:46

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

TCLP Metals Analysis Data Sheet

Lab Name: STL DENVERClient Sample ID: 02D0267-008.001Lot/SDG Number: 02D0267Lab WorkOrder: EQNF5Matrix: WATERLab Sample ID: D1L180146-008% Moisture: N/ADate/Time Collected: 12/12/01 18:45Units: MG/LDate/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	0.0020		0.0020	1	1358107	7470A	018	12/26/01	19:00

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

TCLP Metals Analysis Data Sheet

Lab Name: STL DENVERClient Sample ID: 02D0267-009.001Lot/SDG Number: 02D0267Lab WorkOrder: EQNF7Matrix: WATERLab Sample ID: D1L180146-009% Moisture: N/ADate/Time Collected: 12/12/01 17:40Units: MG/LDate/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-38-2	Arsenic	0.0034	U	0.50	1	1361415	6010B	016	12/28/01	13:58
7440-39-3	Barium	0.46	B	2.0	1	1361415	6010B	016	12/28/01	13:58
7440-43-9	Cadmium	0.00057	B	0.010	1	1361415	6010B	016	12/28/01	13:58
7440-47-3	Chromium	0.015	B	0.060	1	1361415	6010B	016	12/28/01	13:58
7439-92-1	Lead	0.0020	U	0.070	1	1361415	6010B	016	12/28/01	13:58
7782-49-2	Selenium	0.0057	B	0.050	1	1361415	6010B	016	12/28/01	13:58
7440-22-4	Silver	0.00081	B	0.14	1	1361417	6010B	016	12/28/01	11:51

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC
TCLP Metals Analysis Data Sheet

Lab Name: STL DENVER Client Sample ID: 02D0267-009.001
 Lot/SDG Number: 02D0267 Lab WorkOrder: EONF7
 Matrix: WATER Lab Sample ID: D1L180146-009
 % Moisture: N/A Date/Time Collected: 12/12/01 17:40
 Units: MG/L Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	0.038		0.020	10	1358107	7470A	018	12/26/01	19:07

U Result is less than the reporting limit. (RL)
 B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

TCLP Metals Analysis Data Sheet

Lab Name: STL DENVERClient Sample ID: 02D0267-010.001Lot/SDG Number: 02D0267Lab WorkOrder: EONF8Matrix: WATERLab Sample ID: D1L180146-010% Moisture: N/ADate/Time Collected: 12/12/01 17:00Units: MG/LDate/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-38-2	Arsenic	0.0034	U	0.50	1	1361415	6010B	016	12/28/01	14:03
7440-39-3	Barium	0.83	B	2.0	1	1361415	6010B	016	12/28/01	14:03
7440-43-9	Cadmium	0.0010	B	0.010	1	1361415	6010B	016	12/28/01	14:03
7440-47-3	Chromium	0.0012	B	0.060	1	1361415	6010B	016	12/28/01	14:03
7439-92-1	Lead	0.0020	U	0.070	1	1361415	6010B	016	12/28/01	14:03
7782-49-2	Selenium	0.0073	B	0.050	1	1361415	6010B	016	12/28/01	14:03
7440-22-4	Silver	0.00047	U	0.14	1	1361417	6010B	016	12/28/01	11:56

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

TCLP Metals Analysis Data Sheet

Lab Name: STL DENVERClient Sample ID: 02D0267-010.001Lot/SDG Number: 02D0267Lab WorkOrder: EQNF8Matrix: WATERLab Sample ID: DIL180146-010% Moisture: N/ADate/Time Collected: 12/12/01 17:00Units: MG/LDate/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	0.0015	B	0.0020	1	1358107	7470A	018	12/26/01	19:08

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC
TCLP Metals Analysis Data Sheet

Lab Name: STL DENVER
Lot/SDG Number: 02D0267
Matrix: WATER
% Moisture: N/A
Units: MG/L

Client Sample ID: 02D0267-011.001
Lab WorkOrder: EONGC
Lab Sample ID: D1L180146-011
Date/Time Collected: 12/13/01 15:30
Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-38-2	Arsenic	0.0034	U	0.50	1	1361415	6010B	016	12/28/01	14:09
7440-39-3	Barium	1.5	B	2.0	1	1361415	6010B	016	12/28/01	14:09
7440-43-9	Cadmium	0.0064	B	0.010	1	1361415	6010B	016	12/28/01	14:09
7440-47-3	Chromium	0.0037	B	0.060	1	1361415	6010B	016	12/28/01	14:09
7439-92-1	Lead	0.36		0.070	1	1361415	6010B	016	12/28/01	14:09
7782-49-2	Selenium	0.0048	B	0.050	1	1361415	6010B	016	12/28/01	14:09
7440-22-4	Silver	0.00047	U	0.14	1	1361417	6010B	016	12/28/01	12:02

U Result is less than the reporting limit. (RL)
B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

TCLP Metals Analysis Data Sheet

Lab Name: STL DENVERClient Sample ID: 02D0267-011.001Lot/SDG Number: 02D0267Lab WorkOrder: EONGCMatrix: WATERLab Sample ID: D1L180146-011% Moisture: N/ADate/Time Collected: 12/13/01 15:30Units: MG/LDate/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	0.0050		0.0020	1	1358107	7470A	018	12/26/01	19:10

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

TCLP Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-012.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EQNGE

Matrix: WATER

Lab Sample ID: D1L180146-012

% Moisture: N/A

Date/Time Collected: 12/12/01 17:40

Units: MG/L

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-38-2	Arsenic	0.0034	U	0.50	1	1361415	6010B	016	12/28/01	14:14
7440-39-3	Barium	0.50	B	2.0	1	1361415	6010B	016	12/28/01	14:14
7440-43-9	Cadmium	0.00040	B	0.010	1	1361415	6010B	016	12/28/01	14:14
7440-47-3	Chromium	0.013	B	0.060	1	1361415	6010B	016	12/28/01	14:14
7439-92-1	Lead	0.0020	U	0.070	1	1361415	6010B	016	12/28/01	14:14
7782-49-2	Selenium	0.0048	U	0.050	1	1361415	6010B	016	12/28/01	14:14
7440-22-4	Silver	0.00047	U	0.14	1	1361417	6010B	016	12/28/01	12:07

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC
TCLP Metals Analysis Data SheetLab Name: STL DENVERClient Sample ID: 02D0267-012.001Lot/SDG Number: 02D0267Lab WorkOrder: EONGEMatrix: WATERLab Sample ID: D1L180146-012% Moisture: N/ADate/Time Collected: 12/12/01 17:40Units: MG/LDate/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	0.050		0.020	10	1358107	7470A	018	12/26/01	19:17

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

ATTACHMENT D

CHEMICAL TOTALS DATA RESULTS

TOTAL METALS
COVER PAGE - INORGANIC ANALYSIS DATA PACKAGE

Contract: KAISER - HILL, LLC - RFETS SDG No.: 02D0267
Lab Code: STLDEN Case No.: SAS No.:
SOW No.:

<u>Sample ID.</u>	<u>Lab Sample No.</u>
02D0267-001.001	D1L180146-001
02D0267-002.001	D1L180146-002
02D0267-003.001	D1L180146-003
02D0267-004.001	D1L180146-004
02D0267-005.001	D1L180146-005
02D0267-006.001	D1L180146-006
02D0267-007.001	D1L180146-007
02D0267-008.001	D1L180146-008
02D0267-009.001	D1L180146-009
02D0267-010.001	D1L180146-010
02D0267-011.001	D1L180146-011

Were ICP interelement corrections applied? Yes/No YES
Were ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Dee Kettula Name: Dee Kettula
Date: 01-03-2002 Title: Data Analyst

TOTAL METALS
COVER PAGE - INORGANIC ANALYSIS DATA PACKAGE

Contract: KAISER - HILL, LLC - RFETS SDG No.: 02D0267
 Lab Code: STLDEN Case No.: _____ SAS No.: _____
 SOW No.: _____

Sample ID. 02D0267-012.001 Lab Sample No. D1L180146-012

Were ICP interelement corrections applied? Yes/No YES
 Were ICP background corrections applied? Yes/No YES
 If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Dee Kettula Name: Dee Kettula
 Date: 01-03-2002 Title: Data Analyst

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-001.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EONEQ

Matrix: —

Lab Sample ID: D1L180146-001

% Moisture: N/A

Date/Time Collected: 12/12/01 19:50

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7429-90-5	Aluminum	3610		80.0	2	1354343	6010B	002	12/31/01	13:07
7440-36-0	Antimony	0.54	U	24.0	2	1354343	6010B	016	12/31/01	10:10
7440-38-2	Arsenic	1.4	B	4.0	2	1354343	6010B	016	12/31/01	10:10
7440-39-3	Barium	8520		40.0	2	1354343	6010B	016	12/31/01	10:10
7440-41-7	Beryllium	0.23	B	0.40	2	1354343	6010B	016	12/31/01	10:10
7440-42-8	Boron	5.1		3.0	2	1354343	6010B	002	12/31/01	13:07
7440-43-9	Cadmium	0.29	B	2.0	2	1354343	6010B	016	12/31/01	10:10
7440-70-2	Calcium	34900		2000	2	1354343	6010B	002	12/31/01	13:07
7440-47-3	Chromium	5.4		0.80	2	1354343	6010B	016	12/31/01	10:10
7440-48-4	Cobalt	1.1	B	20.0	2	1354343	6010B	016	12/31/01	10:10
7440-50-8	Copper	5.1	B	10.0	2	1354343	6010B	016	12/31/01	10:10
7439-89-6	Iron	4980		40.0	2	1354343	6010B	002	12/31/01	13:07
7439-92-1	Lead	70.7		1.2	2	1354343	6010B	016	12/31/01	10:10
7439-93-2	Lithium	15.2	B	40.0	2	1354343	6010B	002	12/31/01	13:07
7439-95-4	Magnesium	1580	B	2000	2	1354343	6010B	002	12/31/01	13:07
7439-96-5	Manganese	133		6.0	2	1354343	6010B	016	12/31/01	10:10
7439-98-7	Molybdenum	0.53	B	12.0	2	1354343	6010B	016	12/31/01	10:10
7440-02-0	Nickel	4.9	B	16.0	2	1354343	6010B	016	12/31/01	10:10
7440-09-7	Potassium	2540		2000	2	1354343	6010B	002	12/31/01	13:07
7782-49-2	Selenium	1.0	B	2.0	2	1354343	6010B	016	12/31/01	10:10
7631-86-9	Silica as SiO ₂ , Dissolve	150		10.0	2	1354343	6010B	002	12/31/01	13:07
7440-22-4	Silver	0.29	B	2.0	2	1354343	6010B	016	12/31/01	10:10
7440-23-5	Sodium	944	B	2000	2	1354343	6010B	002	12/31/01	13:07
7440-24-6	Strontium	208		80.0	2	1354343	6010B	016	12/31/01	10:10
7440-28-0	Thallium	1.3	B	4.0	2	1354343	6010B	016	12/31/01	10:10
7440-31-5	Tin	52.6	B	80.0	2	1354343	6010B	016	12/31/01	10:10
7440-32-6	Titanium	234		0.40	2	1354343	6010B	016	12/31/01	10:10
11-09-6	Uranium	28.0	U	80.0	2	1354343	6010B	016	12/31/01	10:10
7440-62-2	Vanadium	7.6	B	16.0	2	1354343	6010B	016	12/31/01	10:10

KAISER-HILL LLC
Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-001.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EONFO

Matrix: :

Lab Sample ID: D1L180146-001

% Moisture: N/A

Date/Time Collected: 12/12/01 19:50

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-66-6	Zinc	31.5		8.0	2	1354343	6010B	016	12/31/01	10:10

- U Result is less than the reporting limit. (RL)
B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-001.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EONFO

Matrix:

Lab Sample ID: D1L180146-001

% Moisture: N/A

Date/Time Collected: 12/12/01 19:50

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	5.9		2.0	10	1353240	7471A	018	12/20/01	19:54

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-002.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EONFW

Matrix: .

Lab Sample ID: D1L180146-002

% Moisture: N/A

Date/Time Collected: 12/12/01 19:15

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7429-90-5	Aluminum	1650		80.0	2	1354343	6010B	002	12/31/01	13:18
7440-36-0	Antimony	0.54	U	24.0	2	1354343	6010B	016	12/31/01	10:15
7440-38-2	Arsenic	1.6	B	4.0	2	1354343	6010B	016	12/31/01	10:15
7440-39-3	Barium	9480		40.0	2	1354343	6010B	016	12/31/01	10:15
7440-41-7	Beryllium	0.14	B	0.40	2	1354343	6010B	016	12/31/01	10:15
7440-42-8	Boron	2.0	U	3.0	2	1354343	6010B	002	12/31/01	13:18
7440-43-9	Cadmium	0.27	B	2.0	2	1354343	6010B	016	12/31/01	10:15
7440-70-2	Calcium	70700		2000	2	1354343	6010B	002	12/31/01	13:18
7440-47-3	Chromium	61.8		0.80	2	1354343	6010B	016	12/31/01	10:15
7440-48-4	Cobalt	0.92	U	20.0	2	1354343	6010B	016	12/31/01	10:15
7440-50-8	Copper	3.8	B	10.0	2	1354343	6010B	016	12/31/01	10:15
7439-89-6	Iron	2220		40.0	2	1354343	6010B	002	12/31/01	13:18
7439-92-1	Lead	65.9		1.2	2	1354343	6010B	016	12/31/01	10:15
7439-93-2	Lithium	1.9	B	40.0	2	1354343	6010B	002	12/31/01	13:18
7439-95-4	Magnesium	1280	B	2000	2	1354343	6010B	002	12/31/01	13:18
7439-96-5	Manganese	42.5		6.0	2	1354343	6010B	016	12/31/01	10:15
7439-98-7	Molybdenum	0.39	B	12.0	2	1354343	6010B	016	12/31/01	10:15
7440-02-0	Nickel	32.8		16.0	2	1354343	6010B	016	12/31/01	10:15
7440-09-7	Potassium	912	B	2000	2	1354343	6010B	002	12/31/01	13:18
7782-49-2	Selenium	1.2	B	2.0	2	1354343	6010B	016	12/31/01	10:15
7631-86-9	Silica as SiO2, Dissolve	254		10.0	2	1354343	6010B	002	12/31/01	13:18
7440-22-4	Silver	0.094	U	2.0	2	1354343	6010B	016	12/31/01	10:15
7440-23-5	Sodium	700	U	2000	2	1354343	6010B	002	12/31/01	13:18
7440-24-6	Strontium	136		80.0	2	1354343	6010B	016	12/31/01	10:15
7440-28-0	Thallium	1.2	B	4.0	2	1354343	6010B	016	12/31/01	10:15
7440-31-5	Tin	45.2	B	80.0	2	1354343	6010B	016	12/31/01	10:15
7440-32-6	Titanium	208		0.40	2	1354343	6010B	016	12/31/01	10:15
11-09-6	Uranium	28.0	U	80.0	2	1354343	6010B	016	12/31/01	10:15
7440-62-2	Vanadium	2.4	B	16.0	2	1354343	6010B	016	12/31/01	10:15

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER Client Sample ID: 02D0267-002.001
 Lot/SDG Number: 02D0267 Lab WorkOrder: EQNFV
 Matrix: — Lab Sample ID: D1L180146-002
 % Moisture: N/A Date/Time Collected: 12/12/01 19:15
 Units: MG/KG Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-66-6	Zinc	20.8		8.0	2	1354343	6010B	016	12/31/01	10:15

U Result is less than the reporting limit. (RL)
 B Estimated result. Result is less than RL and greater than or equal to the IDL.



FS-2

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVERClient Sample ID: 02D0267-002.001Lot/SDG Number: 02D0267Lab WorkOrder: EQNFV

Matrix:

Lab Sample ID: D1L180146-002% Moisture: N/ADate/Time Collected: 12/12/01 19:15Units: MG/KGDate/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	5.4		2.0	10	1353240	7471A	018	12/20/01	20:01

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-003.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EONFX

Matrix:

Lab Sample ID: D1L180146-003

% Moisture: N/A

Date/Time Collected: 12/12/01 16:50

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7429-90-5	Aluminum	3200		80.0	2	1354343	6010B	002	12/31/01	13:22
7440-36-0	Antimony	0.54	U	24.0	2	1354343	6010B	016	12/31/01	10:21
7440-38-2	Arsenic	1.6	B	4.0	2	1354343	6010B	016	12/31/01	10:21
7440-39-3	Barium	8820		40.0	2	1354343	6010B	016	12/31/01	10:21
7440-41-7	Beryllium	0.20	B	0.40	2	1354343	6010B	016	12/31/01	10:21
7440-42-8	Boron	4.1		3.0	2	1354343	6010B	002	12/31/01	13:22
7440-43-9	Cadmium	0.29	B	2.0	2	1354343	6010B	016	12/31/01	10:21
7440-70-2	Calcium	28500		2000	2	1354343	6010B	002	12/31/01	13:22
7440-47-3	Chromium	5.4		0.80	2	1354343	6010B	016	12/31/01	10:21
7440-48-4	Cobalt	0.92	U	20.0	2	1354343	6010B	016	12/31/01	10:21
7440-50-8	Copper	5.4	B	10.0	2	1354343	6010B	016	12/31/01	10:21
7439-89-6	Iron	3540		40.0	2	1354343	6010B	002	12/31/01	13:22
7439-92-1	Lead	60.9		1.2	2	1354343	6010B	016	12/31/01	10:21
7439-93-2	Lithium	11.5	B	40.0	2	1354343	6010B	002	12/31/01	13:22
7439-95-4	Magnesium	1520	B	2000	2	1354343	6010B	002	12/31/01	13:22
7439-96-5	Manganese	108		6.0	2	1354343	6010B	016	12/31/01	10:21
7439-98-7	Molybdenum	0.33	B	12.0	2	1354343	6010B	016	12/31/01	10:21
7440-02-0	Nickel	4.6	B	16.0	2	1354343	6010B	016	12/31/01	10:21
7440-09-7	Potassium	5700		2000	2	1354343	6010B	002	12/31/01	13:22
7782-49-2	Selenium	0.96	U	2.0	2	1354343	6010B	016	12/31/01	10:21
7631-86-9	Silica as SiO ₂ , Dissolve	189		10.0	2	1354343	6010B	002	12/31/01	13:22
7440-22-4	Silver	0.43	B	2.0	2	1354343	6010B	016	12/31/01	10:21
7440-23-5	Sodium	1470	B	2000	2	1354343	6010B	002	12/31/01	13:22
7440-24-6	Strontium	194		80.0	2	1354343	6010B	016	12/31/01	10:21
7440-28-0	Thallium	0.82	U	4.0	2	1354343	6010B	016	12/31/01	10:21
7440-31-5	Tin	57.0	B	80.0	2	1354343	6010B	016	12/31/01	10:21
7440-32-6	Titanium	238		0.40	2	1354343	6010B	016	12/31/01	10:21
11-09-6	Uranium	28.0	U	80.0	2	1354343	6010B	016	12/31/01	10:21
7440-62-2	Vanadium	5.5	B	16.0	2	1354343	6010B	016	12/31/01	10:21

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVERClient Sample ID: 02D0267-003.001Lot/SDG Number: 02D0267Lab WorkOrder: EONFX

Matrix:

Lab Sample ID: D1L180146-003% Moisture: N/ADate/Time Collected: 12/12/01 16:50Units: MG/KGDate/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-66-6	Zinc	17.6		8.0	2	1354343	6010B	016	12/31/01	10:21

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-003.001

Lot/SDG Number: 02D0267

Lab WorkOrder: BQNFY

Matrix:

Lab Sample ID: D1L180146-003

% Moisture: N/A

Date/Time Collected: 12/12/01 16:50

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	5.0		2.0	10	1353240	7471A	018	12/20/01	20:08

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC
Total Metals Analysis Data Sheet

Lab Name: STL DENVER
Lot/SDG Number: 02D0267
Matrix:
% Moisture: N/A
Units: MG/KG

Client Sample ID: 02D0267-004.001
Lab WorkOrder: EONFO
Lab Sample ID: D1L180146-004
Date/Time Collected: 12/13/01 14:41
Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7429-90-5	Aluminum	4070		80.0	2	1354343	6010B	002	12/31/01	13:26
7440-36-0	Antimony	0.54	U	24.0	2	1354343	6010B	016	12/31/01	10:26
7440-38-2	Arsenic	0.88	B	4.0	2	1354343	6010B	016	12/31/01	10:26
7440-39-3	Barium	9010		40.0	2	1354343	6010B	016	12/31/01	10:26
7440-41-7	Beryllium	0.27	B	0.40	2	1354343	6010B	016	12/31/01	10:26
7440-42-8	Boron	5.3		3.0	2	1354343	6010B	002	12/31/01	13:26
7440-43-9	Cadmium	0.27	B	2.0	2	1354343	6010B	016	12/31/01	10:26
7440-70-2	Calcium	42800		2000	2	1354343	6010B	002	12/31/01	13:26
7440-47-3	Chromium	6.2		0.80	2	1354343	6010B	016	12/31/01	10:26
7440-48-4	Cobalt	2.3	B	20.0	2	1354343	6010B	016	12/31/01	10:26
7440-50-8	Copper	6.1	B	10.0	2	1354343	6010B	016	12/31/01	10:26
7439-89-6	Iron	4940		40.0	2	1354343	6010B	002	12/31/01	13:26
7439-92-1	Lead	64.7		1.2	2	1354343	6010B	016	12/31/01	10:26
7439-93-2	Lithium	12.0	B	40.0	2	1354343	6010B	002	12/31/01	13:26
7439-95-4	Magnesium	1770	B	2000	2	1354343	6010B	002	12/31/01	13:26
7439-96-5	Manganese	168		6.0	2	1354343	6010B	016	12/31/01	10:26
7439-98-7	Molybdenum	0.88	B	12.0	2	1354343	6010B	016	12/31/01	10:26
7440-02-0	Nickel	5.9	B	16.0	2	1354343	6010B	016	12/31/01	10:26
7440-09-7	Potassium	2890		2000	2	1354343	6010B	002	12/31/01	13:26
7782-49-2	Selenium	1.5	B	2.0	2	1354343	6010B	016	12/31/01	10:26
7631-86-9	Silica as SiO ₂ , Dissolve	217		10.0	2	1354343	6010B	002	12/31/01	13:26
7440-22-4	Silver	0.28	B	2.0	2	1354343	6010B	016	12/31/01	10:26
7440-23-5	Sodium	872	B	2000	2	1354343	6010B	002	12/31/01	13:26
7440-24-6	Strontium	243		80.0	2	1354343	6010B	016	12/31/01	10:26
7440-28-0	Thallium	1.2	B	4.0	2	1354343	6010B	016	12/31/01	10:26
7440-31-5	Tin	70.5	B	80.0	2	1354343	6010B	016	12/31/01	10:26
7440-32-6	Titanium	270		0.40	2	1354343	6010B	016	12/31/01	10:26
11-09-6	Uranium	28.0	U	80.0	2	1354343	6010B	016	12/31/01	10:26
7440-62-2	Vanadium	9.4	B	16.0	2	1354343	6010B	016	12/31/01	10:26

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-004.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EONF0

Matrix:

Lab Sample ID: D1L180146-004

% Moisture: N/A

Date/Time Collected: 12/13/01 14:41

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-66-6	Zinc	30.4		8.0	2	1354343	6010B	016	12/31/01	10:26

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-004.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EQNF0

Matrix:

Lab Sample ID: D1L180146-004

% Moisture: N/A

Date/Time Collected: 12/13/01 14:41

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	6.7		2.0	10	1353240	7471A	018	12/20/01	20:15

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC
Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-005.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EONF2

Matrix: -

Lab Sample ID: D1L180146-005

% Moisture: N/A

Date/Time Collected: 12/13/01 15:30

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7429-90-5	Aluminum	1630		80.0	2	1354343	6010B	002	12/31/01	13:29
7440-36-0	Antimony	0.27	U	24.0	2	1354343	6010B	016	12/31/01	10:31
7440-38-2	Arsenic	1.2	B	4.0	2	1354343	6010B	016	12/31/01	10:31
7440-39-3	Barium	9830		40.0	2	1354343	6010B	016	12/31/01	10:31
7440-41-7	Beryllium	0.15	B	0.40	2	1354343	6010B	016	12/31/01	10:31
7440-42-8	Boron	3.0		3.0	2	1354343	6010B	002	12/31/01	13:29
7440-43-9	Cadmium	0.89	B	2.0	2	1354343	6010B	016	12/31/01	10:31
7440-70-2	Calcium	3110		2000	2	1354343	6010B	002	12/31/01	13:29
7440-47-3	Chromium	12.6		0.80	2	1354343	6010B	016	12/31/01	10:31
7440-48-4	Cobalt	0.46	U	20.0	2	1354343	6010B	016	12/31/01	10:31
7440-50-8	Copper	8.1	B	10.0	2	1354343	6010B	016	12/31/01	10:31
7439-89-6	Iron	3290		40.0	2	1354343	6010B	002	12/31/01	13:29
7439-92-1	Lead	132		1.2	2	1354343	6010B	016	12/31/01	10:31
7439-93-2	Lithium	14.1	B	40.0	2	1354343	6010B	002	12/31/01	13:29
7439-95-4	Magnesium	1300	B	2000	2	1354343	6010B	002	12/31/01	13:29
7439-96-5	Manganese	42.8		6.0	2	1354343	6010B	016	12/31/01	10:31
7439-98-7	Molybdenum	0.75	B	12.0	2	1354343	6010B	016	12/31/01	10:31
7440-02-0	Nickel	7.4	B	16.0	2	1354343	6010B	016	12/31/01	10:31
7440-09-7	Potassium	2600		2000	2	1354343	6010B	002	12/31/01	13:29
7782-49-2	Selenium	1.5	B	2.0	2	1354343	6010B	016	12/31/01	10:31
7631-86-9	Silica as SiO2, Dissolve	129		10.0	2	1354343	6010B	002	12/31/01	13:29
7440-22-4	Silver	9.7		2.0	2	1354343	6010B	016	12/31/01	10:31
7440-23-5	Sodium	1190	B	2000	2	1354343	6010B	002	12/31/01	13:29
7440-24-6	Strontium	124		80.0	2	1354343	6010B	016	12/31/01	10:31
7440-28-0	Thallium	0.95	B	4.0	2	1354343	6010B	016	12/31/01	10:31
7440-31-5	Tin	61.9	B	80.0	2	1354343	6010B	016	12/31/01	10:31
7440-32-6	Titanium	188		0.40	2	1354343	6010B	016	12/31/01	10:31
11-09-6	Uranium	14.8	B	80.0	2	1354343	6010B	016	12/31/01	10:31
7440-62-2	Vanadium	1.9	B	16.0	2	1354343	6010B	016	12/31/01	10:31

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-005.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EQNF2

Matrix:

Lab Sample ID: D1L180146-005

% Moisture: N/A

Date/Time Collected: 12/13/01 15:30

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-66-6	Zinc	26.8		8.0	2	1354343	6010B	016	12/31/01	10:31

- U Result is less than the reporting limit. (RL)
B Estimated result. Result is less than RL and greater than or equal to the IDL.



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KAISER-HILL LLC
Total Metals Analysis Data Sheet

Lab Name: STL DENVER Client Sample ID: 02D0267-005.001
Lot/SDG Number: 02D0267 Lab WorkOrder: EONF2
Matrix: Lab Sample ID: D1L180146-005
% Moisture: N/A Date/Time Collected: 12/13/01 15:30
Units: MG/KG Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	8.1		2.0	10	1353240	7471A	018	12/20/01	20:25

- U Result is less than the reporting limit. (RL)
B Estimated result. Result is less than RL and greater than or equal to the IDL.



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KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-006.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EQNF3

Matrix:

Lab Sample ID: D1L180146-006

% Moisture: N/A

Date/Time Collected: 12/13/01 16:25

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7429-90-5	Aluminum	1580		80.0	2	1354343	6010B	002	12/31/01	13:41
7440-36-0	Antimony	0.54	U	24.0	2	1354343	6010B	016	12/31/01	10:37
7440-38-2	Arsenic	1.0	B	4.0	2	1354343	6010B	016	12/31/01	10:37
7440-39-3	Barium	8440		40.0	2	1354343	6010B	016	12/31/01	10:37
7440-41-7	Beryllium	0.14	B	0.40	2	1354343	6010B	016	12/31/01	10:37
7440-42-8	Boron	2.3	B	3.0	2	1354343	6010B	002	12/31/01	13:41
7440-43-9	Cadmium	0.36	B	2.0	2	1354343	6010B	016	12/31/01	10:37
7440-70-2	Calcium	69200		2000	2	1354343	6010B	002	12/31/01	13:41
7440-47-3	Chromium	4.6		0.80	2	1354343	6010B	016	12/31/01	10:37
7440-48-4	Cobalt	0.92	U	20.0	2	1354343	6010B	016	12/31/01	10:37
7440-50-8	Copper	4.1	B	10.0	2	1354343	6010B	016	12/31/01	10:37
7439-89-6	Iron	2620		40.0	2	1354343	6010B	002	12/31/01	13:41
7439-92-1	Lead	131		1.2	2	1354343	6010B	016	12/31/01	10:37
7439-93-2	Lithium	6.2	B	40.0	2	1354343	6010B	002	12/31/01	13:41
7439-95-4	Magnesium	2140		2000	2	1354343	6010B	002	12/31/01	13:41
7439-96-5	Manganese	45.6		6.0	2	1354343	6010B	016	12/31/01	10:37
7439-98-7	Molybdenum	0.41	B	12.0	2	1354343	6010B	016	12/31/01	10:37
7440-02-0	Nickel	3.0	B	16.0	2	1354343	6010B	016	12/31/01	10:37
7440-09-7	Potassium	718	B	2000	2	1354343	6010B	002	12/31/01	13:41
7782-49-2	Selenium	0.96	U	2.0	2	1354343	6010B	016	12/31/01	10:37
7631-86-9	Silica as SiO ₂ , Dissolve	157		10.0	2	1354343	6010B	002	12/31/01	13:41
7440-22-4	Silver	2.1		2.0	2	1354343	6010B	016	12/31/01	10:37
7440-23-5	Sodium	700	U	2000	2	1354343	6010B	002	12/31/01	13:41
7440-24-6	Strontium	128		80.0	2	1354343	6010B	016	12/31/01	10:37
7440-28-0	Thallium	1.1	B	4.0	2	1354343	6010B	016	12/31/01	10:37
7440-31-5	Tin	41.5	B	80.0	2	1354343	6010B	016	12/31/01	10:37
7440-32-6	Titanium	169		0.40	2	1354343	6010B	016	12/31/01	10:37
11-09-6	Uranium	28.0	U	80.0	2	1354343	6010B	016	12/31/01	10:37
7440-62-2	Vanadium	2.4	B	16.0	2	1354343	6010B	016	12/31/01	10:37



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KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVERClient Sample ID: 02D0267-006.001Lot/SDG Number: 02D0267Lab WorkOrder: EONF3

Matrix:

Lab Sample ID: DIL180146-006% Moisture: N/ADate/Time Collected: 12/13/01 16:25Units: MG/KGDate/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-66-6	Zinc	19.8		8.0	2	1354343	6010B	016	12/31/01	10:37

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-006.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EQNF3

Matrix:

Lab Sample ID: D1L180146-006

% Moisture: N/A

Date/Time Collected: 12/13/01 16:25

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	6.2		2.0	10	1353240	7471A	018	12/20/01	20:33

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-007.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EQNF4

Matrix:

Lab Sample ID: D1L180146-007

% Moisture: N/A

Date/Time Collected: 12/12/01 15:50

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7429-90-5	Aluminium	3780		80.0	2	1354343	6010B	002	12/31/01	13:45
7440-36-0	Antimony	0.54	U	24.0	2	1354343	6010B	016	12/31/01	10:42
7440-38-2	Arsenic	1.2	B	4.0	2	1354343	6010B	016	12/31/01	10:42
7440-39-3	Barium	7780		40.0	2	1354343	6010B	016	12/31/01	10:42
7440-41-7	Beryllium	0.18	B	0.40	2	1354343	6010B	016	12/31/01	10:42
7440-42-8	Boron	3.1		3.0	2	1354343	6010B	002	12/31/01	13:45
7440-43-9	Cadmium	0.33	B	2.0	2	1354343	6010B	016	12/31/01	10:42
7440-70-2	Calcium	42300		2000	2	1354343	6010B	002	12/31/01	13:45
7440-47-3	Chromium	7.9		0.80	2	1354343	6010B	016	12/31/01	10:42
7440-48-4	Cobalt	0.92	U	20.0	2	1354343	6010B	016	12/31/01	10:42
7440-50-8	Copper	7.1	B	10.0	2	1354343	6010B	016	12/31/01	10:42
7439-89-6	Iron	5830		40.0	2	1354343	6010B	002	12/31/01	13:45
7439-92-1	Lead	54.6		1.2	2	1354343	6010B	016	12/31/01	10:42
7439-93-2	Lithium	12.4	B	40.0	2	1354343	6010B	002	12/31/01	13:45
7439-95-4	Magnesium	2520		2000	2	1354343	6010B	002	12/31/01	13:45
7439-96-5	Manganese	70.9		6.0	2	1354343	6010B	016	12/31/01	10:42
7439-98-7	Molybdenum	0.66	B	12.0	2	1354343	6010B	016	12/31/01	10:42
7440-02-0	Nickel	5.0	B	16.0	2	1354343	6010B	016	12/31/01	10:42
7440-09-7	Potassium	2280		2000	2	1354343	6010B	002	12/31/01	13:45
7782-49-2	Selenium	0.96	U	2.0	2	1354343	6010B	016	12/31/01	10:42
7631-86-9	Silica as SiO2, Dissolve	167		10.0	2	1354343	6010B	002	12/31/01	13:45
7440-22-4	Silver	0.094	U	2.0	2	1354343	6010B	016	12/31/01	10:42
7440-23-5	Sodium	1050	B	2000	2	1354343	6010B	002	12/31/01	13:45
7440-24-6	Strontium	278		80.0	2	1354343	6010B	016	12/31/01	10:42
7440-28-0	Thallium	1.1	B	4.0	2	1354343	6010B	016	12/31/01	10:42
7440-31-5	Tin	28.9	B	80.0	2	1354343	6010B	016	12/31/01	10:42
7440-32-6	Titanium	233		0.40	2	1354343	6010B	016	12/31/01	10:42
11-09-6	Uranium	28.0	U	80.0	2	1354343	6010B	016	12/31/01	10:42
7440-62-2	Vanadium	15.2	B	16.0	2	1354343	6010B	016	12/31/01	10:42



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KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVERClient Sample ID: 02D0267-007.001Lot/SDG Number: 02D0267Lab WorkOrder: EONF4

Matrix:

Lab Sample ID: D1L180146-007% Moisture: N/ADate/Time Collected: 12/12/01 15:50Units: MG/KGDate/Time Received: 12/17/01 13:55

CASNo.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-66-6	Zinc	474		8.0	2	1354343	6010B	016	12/31/01	10:42

U Result is less than the reporting limit (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-007.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EONF4

Matrix:

Lab Sample ID: D1L180146-007

% Moisture: N/A

Date/Time Collected: 12/12/01 15:50

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	2.9		2.0	10	1353240	7471A	018	12/20/01	20:41

- U Result is less than the reporting limit (RL)
B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-008.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EONF5

Matrix:

Lab Sample ID: D1L180146-008

% Moisture: N/A

Date/Time Collected: 12/12/01 18:45

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7429-90-5	Aluminum	3080		80.0	2	1354343	6010B	002	12/31/01	13:48
7440-36-0	Antimony	0.54	U	24.0	2	1354343	6010B	016	12/31/01	10:58
7440-38-2	Arsenic	1.0	B	4.0	2	1354343	6010B	016	12/31/01	10:58
7440-39-3	Barium	9540		40.0	2	1354343	6010B	016	12/31/01	10:58
7440-41-7	Beryllium	0.21	B	0.40	2	1354343	6010B	016	12/31/01	10:58
7440-42-8	Boron	2.0	B	3.0	2	1354343	6010B	002	12/31/01	13:48
7440-43-9	Cadmium	0.40	B	2.0	2	1354343	6010B	016	12/31/01	10:58
7440-70-2	Calcium	22800		2000	2	1354343	6010B	002	12/31/01	13:48
7440-47-3	Chromium	6.9		0.80	2	1354343	6010B	016	12/31/01	10:58
7440-48-4	Cobalt	0.92	U	20.0	2	1354343	6010B	016	12/31/01	10:58
7440-50-8	Copper	6.2	B	10.0	2	1354343	6010B	016	12/31/01	10:58
7439-89-6	Iron	4020		40.0	2	1354343	6010B	002	12/31/01	13:48
7439-92-1	Lead	73.8		1.2	2	1354343	6010B	016	12/31/01	10:58
7439-93-2	Lithium	5.8	B	40.0	2	1354343	6010B	002	12/31/01	13:48
7439-95-4	Magnesium	1260	B	2000	2	1354343	6010B	002	12/31/01	13:48
7439-96-5	Manganese	106		6.0	2	1354343	6010B	016	12/31/01	10:58
7439-98-7	Molybdenum	0.63	B	12.0	2	1354343	6010B	016	12/31/01	10:58
7440-02-0	Nickel	5.8	B	16.0	2	1354343	6010B	016	12/31/01	10:58
7440-09-7	Potassium	2160		2000	2	1354343	6010B	002	12/31/01	13:48
7782-49-2	Selenium	1.0	B	2.0	2	1354343	6010B	016	12/31/01	10:58
7631-86-9	Silica as SiO2, Dissolve	141		10.0	2	1354343	6010B	002	12/31/01	13:48
7440-22-4	Silver	0.68	B	2.0	2	1354343	6010B	016	12/31/01	10:58
7440-23-5	Sodium	720	B	2000	2	1354343	6010B	002	12/31/01	13:48
7440-24-6	Strontium	189		80.0	2	1354343	6010B	016	12/31/01	10:58
7440-28-0	Thallium	0.89	B	4.0	2	1354343	6010B	016	12/31/01	10:58
7440-31-5	Tin	29.9	B	80.0	2	1354343	6010B	016	12/31/01	10:58
7440-32-6	Titanium	246		0.40	2	1354343	6010B	016	12/31/01	10:58
11-09-6	Uranium	28.0	U	80.0	2	1354343	6010B	016	12/31/01	10:58
7440-62-2	Vanadium	6.2	B	16.0	2	1354343	6010B	016	12/31/01	10:58



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KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVERClient Sample ID: 02D0267-008.001Lot/SDG Number: 02D0267Lab WorkOrder: EQNF5

Matrix:

Lab Sample ID: D1L180146-008% Moisture: N/ADate/Time Collected: 12/12/01 18:45Units: MG/KGDate/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-66-6	Zinc	32.5		8.0	2	1354343	6010B	016	12/31/01	10:58

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-008.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EQNF5

Matrix:

Lab Sample ID: D1L180146-008

% Moisture: N/A

Date/Time Collected: 12/12/01 18:45

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	6.3		2.0	10	1353240	7471A	018	12/20/01	20:48

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-009.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EQNF7

Matrix:

Lab Sample ID: DIL180146-009

% Moisture: N/A

Date/Time Collected: 12/12/01 17:40

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7429-90-5	Aluminum	4390		80.0	2	1354343	6010B	002	12/31/01	13:52
7440-36-0	Antimony	0.54	U	24.0	2	1354343	6010B	016	12/31/01	11:14
7440-38-2	Arsenic	1.1	B	4.0	2	1354343	6010B	016	12/31/01	11:14
7440-39-3	Barium	7140		40.0	2	1354343	6010B	016	12/31/01	11:14
7440-41-7	Beryllium	0.26	B	0.40	2	1354343	6010B	016	12/31/01	11:14
7440-42-8	Boron	5.2		3.0	2	1354343	6010B	002	12/31/01	13:52
7440-43-9	Cadmium	0.33	B	2.0	2	1354343	6010B	016	12/31/01	11:14
7440-70-2	Calcium	52600		2000	2	1354343	6010B	002	12/31/01	13:52
7440-47-3	Chromium	8.0		0.80	2	1354343	6010B	016	12/31/01	11:14
7440-48-4	Cobalt	2.0	B	20.0	2	1354343	6010B	016	12/31/01	11:14
7440-50-8	Copper	11.6		10.0	2	1354343	6010B	016	12/31/01	11:14
7439-89-6	Iron	5040		40.0	2	1354343	6010B	002	12/31/01	13:52
7439-92-1	Lead	163		1.2	2	1354343	6010B	016	12/31/01	11:14
7439-93-2	Lithium	6.6	B	40.0	2	1354343	6010B	002	12/31/01	13:52
7439-95-4	Magnesium	1760	B	2000	2	1354343	6010B	002	12/31/01	13:52
7439-96-5	Manganese	182		6.0	2	1354343	6010B	016	12/31/01	11:14
7439-98-7	Molybdenum	0.41	B	12.0	2	1354343	6010B	016	12/31/01	11:14
7440-02-0	Nickel	5.9	B	16.0	2	1354343	6010B	016	12/31/01	11:14
7440-09-7	Potassium	3500		2000	2	1354343	6010B	002	12/31/01	13:52
7782-49-2	Selenium	0.96	U	2.0	2	1354343	6010B	016	12/31/01	11:14
7631-86-9	Silica as SiO ₂ , Dissolve	153		10.0	2	1354343	6010B	002	12/31/01	13:52
7440-22-4	Silver	0.094	U	2.0	2	1354343	6010B	016	12/31/01	11:14
7440-23-5	Sodium	700	U	2000	2	1354343	6010B	002	12/31/01	13:52
7440-24-6	Strontium	246		80.0	2	1354343	6010B	016	12/31/01	11:14
7440-28-0	Thallium	1.5	B	4.0	2	1354343	6010B	016	12/31/01	11:14
7440-31-5	Tin	31.7	B	80.0	2	1354343	6010B	016	12/31/01	11:14
7440-32-6	Titanium	303		0.40	2	1354343	6010B	016	12/31/01	11:14
11-09-6	Uranium	28.0	U	80.0	2	1354343	6010B	016	12/31/01	11:14
7440-62-2	Vanadium	11.9	B	16.0	2	1354343	6010B	016	12/31/01	11:14



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KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-009.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EQNF7

Matrix:

Lab Sample ID: D1L180146-009

% Moisture: N/A

Date/Time Collected: 12/12/01 17:40

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-66-6	Zinc	658		8.0	2	1354343	6010B	016	12/31/01	11:14

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-009.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EQNF7

Matrix:

Lab Sample ID: D1L180146-009

% Moisture: N/A

Date/Time Collected: 12/12/01 17:40

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	5.1		2.0	10	1353240	7471A	018	12/20/01	20:56

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.



-3 Dup
FS-10 MF

KAISER-HILL LLC
Total Metals Analysis Data Sheet

Lab Name: STL DENVER
Lot/SDG Number: 02D0267
Matrix:
% Moisture: N/A
Units: MG/KG

Client Sample ID: 02D0267-010.001
Lab WorkOrder: EQNF8
Lab Sample ID: D1L180146-010
Date/Time Collected: 12/12/01 17:00
Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7429-90-5	Aluminum	3380		80.0	2	1354343	6010B	002	12/31/01	13:56
7440-36-0	Antimony	0.54	U	24.0	2	1354343	6010B	016	12/31/01	11:19
7440-38-2	Arsenic	1.2	B	4.0	2	1354343	6010B	016	12/31/01	11:19
7440-39-3	Barium	6980		40.0	2	1354343	6010B	016	12/31/01	11:19
7440-41-7	Beryllium	0.19	B	0.40	2	1354343	6010B	016	12/31/01	11:19
7440-42-8	Boron	3.7		3.0	2	1354343	6010B	002	12/31/01	13:56
7440-43-9	Cadmium	0.28	B	2.0	2	1354343	6010B	016	12/31/01	11:19
7440-70-2	Calcium	30400		2000	2	1354343	6010B	002	12/31/01	13:56
7440-47-3	Chromium	4.3		0.80	2	1354343	6010B	016	12/31/01	11:19
7440-48-4	Cobalt	0.92	U	20.0	2	1354343	6010B	016	12/31/01	11:19
7440-50-8	Copper	6.2	B	10.0	2	1354343	6010B	016	12/31/01	11:19
7439-89-6	Iron	4470		40.0	2	1354343	6010B	002	12/31/01	13:56
7439-92-1	Lead	42.9		1.2	2	1354343	6010B	016	12/31/01	11:19
7439-93-2	Lithium	12.0	B	40.0	2	1354343	6010B	002	12/31/01	13:56
7439-95-4	Magnesium	1480	B	2000	2	1354343	6010B	002	12/31/01	13:56
7439-96-5	Manganese	116		6.0	2	1354343	6010B	016	12/31/01	11:19
7439-98-7	Molybdenum	0.26	U	12.0	2	1354343	6010B	016	12/31/01	11:19
7440-02-0	Nickel	4.7	B	16.0	2	1354343	6010B	016	12/31/01	11:19
7440-09-7	Potassium	5150		2000	2	1354343	6010B	002	12/31/01	13:56
7782-49-2	Selenium	0.96	U	2.0	2	1354343	6010B	016	12/31/01	11:19
7631-86-9	Silica as SiO2, Dissolve	236		10.0	2	1354343	6010B	002	12/31/01	13:56
7440-22-4	Silver	0.094	U	2.0	2	1354343	6010B	016	12/31/01	11:19
7440-23-5	Sodium	1390	B	2000	2	1354343	6010B	002	12/31/01	13:56
7440-24-6	Strontium	177		80.0	2	1354343	6010B	016	12/31/01	11:19
7440-28-0	Thallium	0.84	B	4.0	2	1354343	6010B	016	12/31/01	11:19
7440-31-5	Tin	56.2	B	80.0	2	1354343	6010B	016	12/31/01	11:19
7440-32-6	Titanium	245		0.40	2	1354343	6010B	016	12/31/01	11:19
11-09-6	Uranium	28.0	U	80.0	2	1354343	6010B	016	12/31/01	11:19
7440-62-2	Vanadium	6.6	B	16.0	2	1354343	6010B	016	12/31/01	11:19

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER Client Sample ID: 02D0267-010.001
 Lot/SDG Number: 02D0267 Lab WorkOrder: EONF8
 Matrix: Lab Sample ID: D1L180146-010
 % Moisture: N/A Date/Time Collected: 12/12/01 17:00
 Units: MG/KG Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-66-6	Zinc	18.9		8.0	2	1354343	6010B	016	12/31/01	11:19

U Result is less than the reporting limit. (RL)
 B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER Client Sample ID: 02D0267-010.001
 Lot/SDG Number: 02D0267 Lab WorkOrder: EQNF8
 Matrix: Lab Sample ID: DIL180146-010
 % Moisture: N/A Date/Time Collected: 12/12/01 17:00
 Units: MG/KG Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	4.0		2.0	10	1353240	7471A	018	12/20/01	21:03

U Result is less than the reporting limit. (RL)
 B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-011.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EONGC

Matrix:

Lab Sample ID: D1L180146-011

% Moisture: N/A

Date/Time Collected: 12/13/01 15:30

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7429-90-5	Aluminum	1440		80.0	2	1354343	6010B	002	12/31/01	14:00
7440-36-0	Antimony	0.54	U	24.0	2	1354343	6010B	016	12/31/01	11:24
7440-38-2	Arsenic	1.0	B	4.0	2	1354343	6010B	016	12/31/01	11:24
7440-39-3	Barium	7150		40.0	2	1354343	6010B	016	12/31/01	11:24
7440-41-7	Beryllium	0.15	B	0.40	2	1354343	6010B	016	12/31/01	11:24
7440-42-8	Boron	2.3	B	3.0	2	1354343	6010B	002	12/31/01	14:00
7440-43-9	Cadmium	0.46	B	2.0	2	1354343	6010B	016	12/31/01	11:24
7440-70-2	Calcium	2120		2000	2	1354343	6010B	002	12/31/01	14:00
7440-47-3	Chromium	6.9		0.80	2	1354343	6010B	016	12/31/01	11:24
7440-48-4	Cobalt	0.92	U	20.0	2	1354343	6010B	016	12/31/01	11:24
7440-50-8	Copper	5.3	B	10.0	2	1354343	6010B	016	12/31/01	11:24
7439-89-6	Iron	2710		40.0	2	1354343	6010B	002	12/31/01	14:00
7439-92-1	Lead	126		1.2	2	1354343	6010B	016	12/31/01	11:24
7439-93-2	Lithium	13.2	B	40.0	2	1354343	6010B	002	12/31/01	14:00
7439-95-4	Magnesium	1120	B	2000	2	1354343	6010B	002	12/31/01	14:00
7439-96-5	Manganese	35.8		6.0	2	1354343	6010B	016	12/31/01	11:24
7439-98-7	Molybdenum	0.55	B	12.0	2	1354343	6010B	016	12/31/01	11:24
7440-02-0	Nickel	4.5	B	16.0	2	1354343	6010B	016	12/31/01	11:24
7440-09-7	Potassium	3100		2000	2	1354343	6010B	002	12/31/01	14:00
7782-49-2	Selenium	0.96	U	2.0	2	1354343	6010B	016	12/31/01	11:24
7631-86-9	Silica as SiO ₂ , Dissolve	104		10.0	2	1354343	6010B	002	12/31/01	14:00
7440-22-4	Silver	0.34	B	2.0	2	1354343	6010B	016	12/31/01	11:24
7440-23-5	Sodium	1280	B	2000	2	1354343	6010B	002	12/31/01	14:00
7440-24-6	Strontium	100		80.0	2	1354343	6010B	016	12/31/01	11:24
7440-28-0	Thallium	1.3	B	4.0	2	1354343	6010B	016	12/31/01	11:24
7440-31-5	Tin	61.7	B	80.0	2	1354343	6010B	016	12/31/01	11:24
7440-32-6	Titanium	176		0.40	2	1354343	6010B	016	12/31/01	11:24
11-09-6	Uranium	28.0	U	80.0	2	1354343	6010B	016	12/31/01	11:24
7440-62-2	Vanadium	1.0	U	16.0	2	1354343	6010B	016	12/31/01	11:24

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-011.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EONGC

Matrix:

Lab Sample ID: D1L180146-011

% Moisture: N/A

Date/Time Collected: 12/13/01 15:30

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-66-6	Zinc	25.6		8.0	2	1354343	6010B	016	12/31/01	11:24

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.



FS-5 DUP

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVERClient Sample ID: 02D0267-011.001Lot/SDG Number: 02D0267Lab WorkOrder: EQNGC

Matrix:

Lab Sample ID: D1L180146-011% Moisture: N/ADate/Time Collected: 12/13/01 15:30Units: MG/KGDate/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	7.0		2.0	10	1353240	7471A	018	12/20/01	21:09

U Result is less than the reporting limit. (RL)

B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-012.001

Lot/SDG Number: 02D0267

Lab WorkOrder: BQNGE

Matrix:

Lab Sample ID: D1L180146-012

% Moisture: N/A

Date/Time Collected: 12/12/01 17:40

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7429-90-5	Aluminum	1160		80.0	2	1354343	6010B	002	12/31/01	14:04
7440-36-0	Antimony	0.54	U	24.0	2	1354343	6010B	016	12/31/01	11:30
7440-38-2	Arsenic	0.68	U	4.0	2	1354343	6010B	016	12/31/01	11:30
7440-39-3	Barium	6690		40.0	2	1354343	6010B	016	12/31/01	11:30
7440-41-7	Beryllium	0.10	U	0.40	2	1354343	6010B	016	12/31/01	11:30
7440-42-8	Boron	2.0	U	3.0	2	1354343	6010B	002	12/31/01	14:04
7440-43-9	Cadmium	0.48	B	2.0	2	1354343	6010B	016	12/31/01	11:30
7440-70-2	Calcium	4950		2000	2	1354343	6010B	002	12/31/01	14:04
7440-47-3	Chromium	3.1		0.80	2	1354343	6010B	016	12/31/01	11:30
7440-48-4	Cobalt	0.92	U	20.0	2	1354343	6010B	016	12/31/01	11:30
7440-50-8	Copper	16.3		10.0	2	1354343	6010B	016	12/31/01	11:30
7439-89-6	Iron	1260		40.0	2	1354343	6010B	002	12/31/01	14:04
7439-92-1	Lead	226		1.2	2	1354343	6010B	016	12/31/01	11:30
7439-93-2	Lithium	8.1	B	40.0	2	1354343	6010B	002	12/31/01	14:04
7439-95-4	Magnesium	1570	B	2000	2	1354343	6010B	002	12/31/01	14:04
7439-96-5	Manganese	40.8		6.0	2	1354343	6010B	016	12/31/01	11:30
7439-98-7	Molybdenum	0.73	B	12.0	2	1354343	6010B	016	12/31/01	11:30
7440-02-0	Nickel	1.4	U	16.0	2	1354343	6010B	016	12/31/01	11:30
7440-09-7	Potassium	983	B	2000	2	1354343	6010B	002	12/31/01	14:04
7782-49-2	Selenium	0.96	U	2.0	2	1354343	6010B	016	12/31/01	11:30
7631-86-9	Silica as SiO ₂ , Dissolve	88.5		10.0	2	1354343	6010B	002	12/31/01	14:04
7440-22-4	Silver	0.12	B	2.0	2	1354343	6010B	016	12/31/01	11:30
7440-23-5	Sodium	700	U	2000	2	1354343	6010B	002	12/31/01	14:04
7440-24-6	Strontium	115		80.0	2	1354343	6010B	016	12/31/01	11:30
7440-28-0	Thallium	0.86	B	4.0	2	1354343	6010B	016	12/31/01	11:30
7440-31-5	Tin	41.7	B	80.0	2	1354343	6010B	016	12/31/01	11:30
7440-32-6	Titanium	243		0.40	2	1354343	6010B	016	12/31/01	11:30
11-09-6	Uranium	28.0	U	80.0	2	1354343	6010B	016	12/31/01	11:30
7440-62-2	Vanadium	6.3	B	16.0	2	1354343	6010B	016	12/31/01	11:30

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER

Client Sample ID: 02D0267-012.001

Lot/SDG Number: 02D0267

Lab WorkOrder: EONGE

Matrix:

Lab Sample ID: D1L180146-012

% Moisture: N/A

Date/Time Collected: 12/12/01 17:40

Units: MG/KG

Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7440-66-6	Zinc	1820		8.0	2	1354343	6010B	016	12/31/01	11:30

- U Result is less than the reporting limit. (RL)
B Estimated result. Result is less than RL and greater than or equal to the IDL.

KAISER-HILL LLC

Total Metals Analysis Data Sheet

Lab Name: STL DENVER Client Sample ID: 02D0267-012.001
 Lot/SDG Number: 02D0267 Lab WorkOrder: EONGE
 Matrix: Lab Sample ID: D1L180146-012
 % Moisture: N/A Date/Time Collected: 12/12/01 17:40
 Units: MG/KG Date/Time Received: 12/17/01 13:55

CAS No.	Analyte	Conc.	Q	RL	Dilution Factor	QC Batch ID	Method	Instrument ID	Analysis Date	Analysis Time
7439-97-6	Mercury	18.3	B	20.0	100	1353240	7471A	018	12/20/01	21:23

U Result is less than the reporting limit. (RL)
 B Estimated result. Result is less than RL and greater than or equal to the IDL.

ATTACHMENT E

Data Quality Assessment (DQA) Detail

DATA QUALITY ASSESSMENT (DQA)

VERIFICATION & VALIDATION OF RESULTS

V&V of the data confirm that appropriate quality controls are implemented throughout the sampling and analysis process, and that any substandard controls result in qualification or rejection of the data in question. The required quality controls and their implementation are summarized in a tabular, checklist format for each category of data – radiological surveys and chemical analyses (specifically beryllium and metals.)

DQA criteria and results are provided in a tabular format for each suite of surveys or chemical analyses performed; the radiological survey assessment is provided in Table E-1, beryllium in Table E-2, and metals in Table E-3. A data completeness summary for all results is given in Table E-4.

All relevant Quality records supporting this report are maintained in a Project File. The report will be submitted to the CERCLA Administrative Record for permanent storage within 30 days of approval by the Regulators. All radiological data are organized into Survey Packages, which correlate to unique (MARSSIM) Survey Units. Chemical data are organized by RIN (Report Identification Number) and are traceable to the sample number and corresponding sample location.

Alpha and beta/gamma survey designs were implemented for B559, B561 and B528 facilities based on the conservatism of the transuranic limits used as DCGLs in the unrestricted release decision process. Stated differently, based on the well-established suite of actinides historically used at the RFETS, all of these actinides would emit alpha radiation in excess of the applicable transuranic DCGLs before other DCGLs would be exceeded for their respective Uranium species – Technical Basis Document 00162, Rev. 0, *Technical Justification for Types of Surveys Performed During Reconnaissance Level Characterization Surveys and Pre-Demolition Surveys in RISS Facilities*, corroborates the use of this approach.

Consistent with EPA's G-4 DQO process, the radiological survey design was optimized by checking actual measurement results against model output with original estimates. Use of actual sample/survey (results) variances in the MARSSIM DQO model confirms that an adequate number of surveys were acquired.

SUMMARY

In summary, the data presented in this report have been verified and validated relative to quality requirements and the project decisions as stated in the original DQOs. All data are useable based on qualifications stated herein and are considered satisfactory without qualification. All media surveyed and sampled yielded results (primarily radiological) that support a Type 2 facility classification.

Table E-1 V&V of Radiological Surveys For B559, B561 and B528

V&V CRITERIA, RADIOLOGICAL SURVEYS		K-H RSP 16.00 Series MARSSIM (NUREG-1575)	
QUALITY REQUIREMENTS			
Parameters		Measure	frequency
ACCURACY	initial calibrations	90%<x<110%	≥1
	daily source checks	80%<x<120%	≥1/day
	local area background (Field)	typically < 10 dpm	≥1/day
PRECISION	field duplicate measurements for TSA	≥5% of real survey points	≥10% of reals
REPRESENTATIVENESS	MARSSIM gridding methodology (Survey Areas A – H)	statistical and biased	NA
	Survey Maps	Measured in Meters	NA
	Controlling Documents (Characterization Pkg; RSPs)	qualitative	NA
COMPARABILITY	units of measure	dpm/100cm ²	NA
COMPLETENESS	Plan vs. Actual surveys usable results vs. unusable	>95% >95%	NA
SENSITIVITY	detection limits	TSA: ≤50 dpm/100cm ² RA: ≤10 dpm/100cm ²	all measures
			MDAs ≤ ½ DCGL _w per MARSSIM guidelines
		COMMENTS	
		multi-point calibration through the measurement range encountered in the field; programmatic records	
		Performed daily/within range	
		all local area backgrounds were within expected ranges (i.e., no elevated anomalies)	
		N/A	
		random w/ statistical confidence	
		random and biased measurement locations controlled/mapped to ± 1m	
		Refer to the Characterization Package (planning document) for field/sampling procedures (located in Project files); thorough documentation of the planning, sampling/analysis process, and data reduction into formats	
		Use of standardized engineering units in the reporting of measurement results	
		see Table E-4 for details	
		MDAs ≤ ½ DCGL _w per MARSSIM guidelines	

Table E-2 V&V of Chemical Results-Beryllium For B559, B561 and B528

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE	
BERYLLIUM	Prep: NMAM 7300	LAB ---->	RFEIS - B559 Lab
	METHOD: OSHA ID-125G	RIN ---->	RIN02D0156 RIN02D0308 RIN02D0188
QUALITY REQUIREMENTS		Measure	frequency
ACCURACY	Calibrations Initial	linear calibration	≥1
	Continuing	80%<%R<120%	≥1
	LCS/MIS	80%<%R<120%	≥1
	Blanks (lab & field)	<MDL	≥1
	interference check std (ICP)		NA
PRECISION	LCSD	80%<%R<120% (RPD<20%)	≥1
	field duplicate	all results < RL	≥1
REPRESENTATIVENESS	COC	Qualitative	NA
	hold times/preservation	Qualitative	NA
	maps		
	Controlling Documents (Plans, Procedures, etc.)	Qualitative	NA
COMPARABILITY	measurement units	ug/100cm ²	NA
COMPLETENESS	Plan vs. Actual samples usable results vs. unusable	>95% >95%	NA
SENSITIVITY	detection limits	MDL of 0.012 ug/100cm ²	all measures
		COMMENTS	
		No qualifications significant enough to change project decisions, i.e., classification of Type 2 facility confirmed. All results were below associated action levels.	

Table E-3 V&V of Chemical Results-Metals For B559, B561 and B528

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE	
Metals (total)	METHOD: SW6010/6020	LAB ---->	Severn-Trent, Denver, Co.
		RIN ---->	RIN02D0267
QUALITY REQUIREMENT			
		Measure	frequency
ACCURACY	Calibration – initial/continuing	linear calibration	≥1/batch
		80%≤%R<120%	≥1/batch
	LCS	80%≤%R<120%	≥1/batch
	MS	75%≤%R<125%	≥1/batch
	Blanks - lab	mg/kg	≥1/batch
	serial dilutions	%D<10%	≥1/batch
PRECISION	interference check std (ICP)	80%≤%R<120%	bracket batch
	MSD	RPD<30%	≥1/batch
	field duplicate	all results < RL	≥1/batch
REPRESENTATIVENESS	COC	Qualitative	NA
	hold times/preservation	≤180 days	NA
	Controlling Documents (Plans, Procedures, Maps, etc.)	Qualitative	NA
COMPARABILITY		mg/kg	NA
COMPLETENESS	Plan vs. Actual samples usable results vs. unusable	>95%	NA
SENSITIVITY	detection limits	Various	all analytes

COMMENTS

No qualifications significant enough to change project decisions, i.e., classification as a Type 2 facility confirmed. TLCP results were below associated action levels.

Table E-4 Data Completeness Summary for B559, B561 and B528

ANALYTE	Building/Area	Sample Number Planned (Real & QC) ^A	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Metals	Survey Area: B559	9 real, 3 duplicates (solids)	9 real, 3 duplicates (solids)	No metals exceeded the regulatory limits	RIN02D0267 – Method SW6010/6020; All metal results were below RCRA Regulatory Limits.
Beryllium	Survey Area: B528	10 random, 3 biased (interior)	13 real, 1 blank	No contamination found at any location	OSHA ID-125G – RIN02D0156. No results above action level (0.2ug/100cm ²) or investigative level (0.1 ug/100cm ²).
Beryllium	Survey Area: B559	75 random, 25 biased (interior)	100 real, 10 blanks	No contamination found at any location	OSHA ID-125G – RIN02D0308. No results above action level (0.2ug/100cm ²) or investigative level (0.1 ug/100cm ²).
Beryllium	Survey Area: B561	31 random, 10 biased (interior)	41 real, 4 blanks	No contamination found at any location	OSHA ID-125G – RIN02D0188. No results above action level (0.2ug/100cm ²) or investigative level (0.1 ug/100cm ²).
Radiological	Survey Area A: B559 – non CA areas	79 α β TSA (uniform and biased) 79 α β Smears (uniform and biased) 1m ² scan <2 m.	158 real (interior)	No contamination at any location; all values below unrestricted release levels	No results above DCGL _w or DCGL _{EMC} action level (20 dpm/100cm ² removable, 100 dpm/100cm ² average, and 300 dpm/100cm ² maximum.
Radiological	Survey Area B: B559 – Rooms 103 and 130	74 α β TSA (uniform and biased) 74 α β Smears (uniform and biased) 1m ² scan <2 m.	148 real (interior)	Above the RLC DCGL _w guidelines	Numerous sample locations above DCGL _w or DCGL _{EMC} action level (20 dpm/100cm ² removable, 100 dpm/100cm ² average, and 300 dpm/100cm ² maximum.
Radiological	Survey Area C: B559 – Rooms 101, 102 and South Dock	89 α β TSA (uniform and biased) 89 α β Smears (uniform and biased) 1m ² scan <2 m.	178 real (interior)	Above the RLC DCGL _w guidelines	Numerous sample locations above DCGL _w or DCGL _{EMC} action level (20 dpm/100cm ² removable, 100 dpm/100cm ² average, and 300 dpm/100cm ² maximum.
Radiological	Survey Area D: B561 & Tunnel	70 α β TSA (uniform and biased) 70 α β Smears (uniform and biased) 1m ² scan <2 m.	140 real (interior)	No contamination at any location; all values below unrestricted release levels	No results above DCGL _w or DCGL _{EMC} action level (20 dpm/100cm ² removable, 100 dpm/100cm ² average, and 300 dpm/100cm ² maximum.

Table E-4 Data Completeness Summary for B559, B561 and B528

ANALYTE	Building/Area	Sample Number Planned (Real & QC) ^A	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Survey Area E: B528	70 α β TSA (uniform and biased) 70 α β Smears (uniform and biased) 1m ² scan <2 m.	140 real (interior)	Above the RLC DCGL _w guidelines	Numerous sample locations above DCGL _w or DCGL _{EMC} action level (20 dpm/100cm ² removable, 100 dpm/100cm ² average, and 300 dpm/100cm ² maximum.
Radiological	Survey Area F: B559 (exterior)	30 α β TSA (uniform and biased) 30 α β Smears (uniform and biased) 1m ² scan <2 m.	60 real (exterior)	No contamination at any location; all values below unrestricted release levels	No results above DCGL _w or DCGL _{EMC} action level (20 dpm/100cm ² removable, 100 dpm/100cm ² average, and 300 dpm/100cm ² maximum.
Radiological	Survey Area G: B561 (exterior)	30 α β TSA (uniform and biased) 30 α β Smears (uniform and biased) 1m ² scan <2 m.	60 real (exterior)	No contamination at any location; all values below unrestricted release levels	No results above DCGL _w or DCGL _{EMC} action level (20 dpm/100cm ² removable, 100 dpm/100cm ² average, and 300 dpm/100cm ² maximum.
Radiological	Survey Area H: B528 (exterior)	30 α β TSA (uniform and biased) 30 α β Smears (uniform and biased) 1m ² scan <2 m.	60 real (exterior)	No contamination at any location; all values below unrestricted release levels	No results above DCGL _w or DCGL _{EMC} action level (20 dpm/100cm ² removable, 100 dpm/100cm ² average, and 300 dpm/100cm ² maximum.

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RLC SURVEY FOR B559 CLUSTER

SURVEY AREAS

Area A (1692 meters square)
Area B (515 meters square)
Area C (863 meters square)

SURVEY MAP LEGEND

Smear & TSA Location

Smear, TSA & Sample Location

Open/Inaccessible Area

Area in Another Survey Unit

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Scan Survey Information
Survey Instrument ID #(s):
RCT ID #(s):

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

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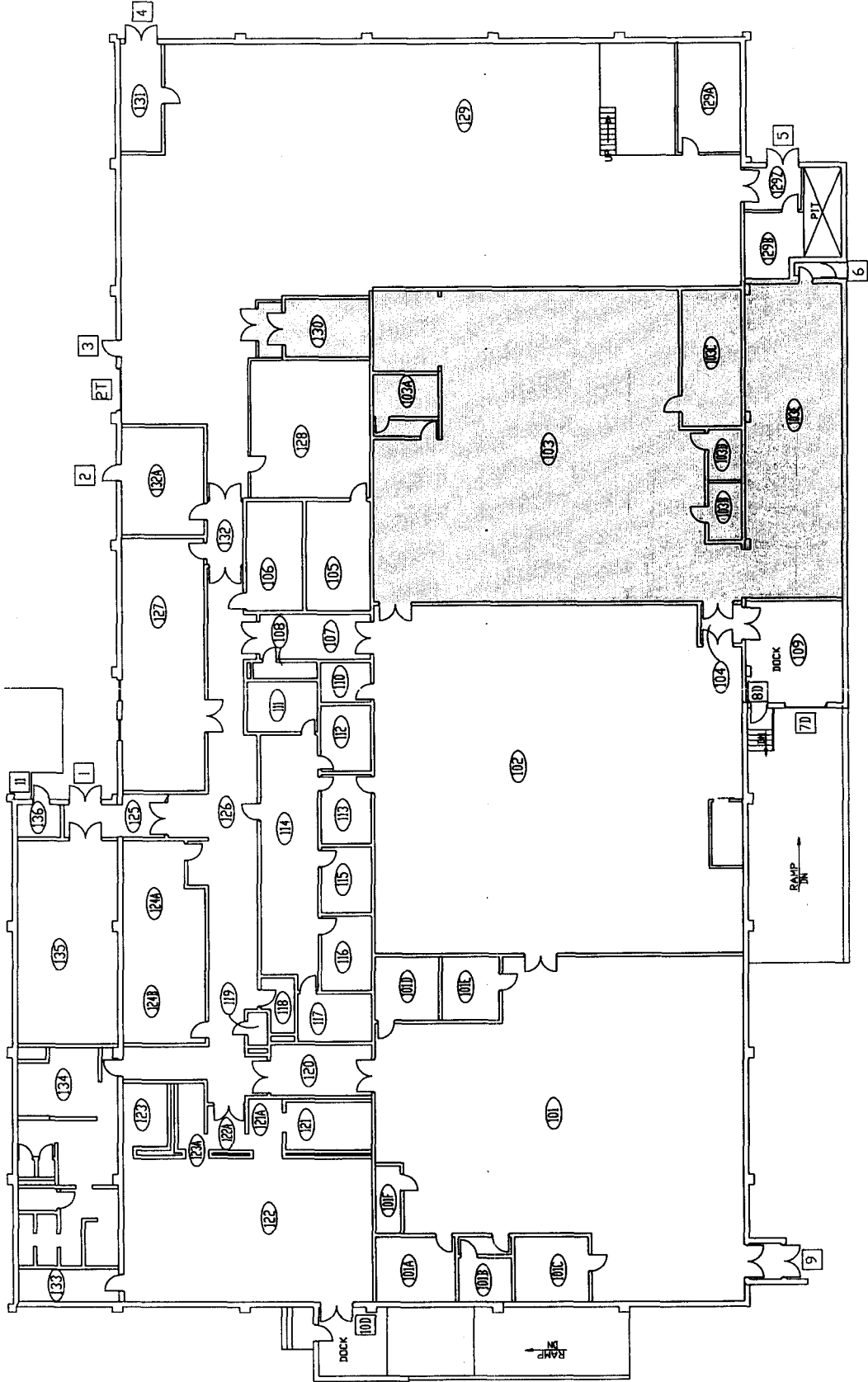
Prepared for: KAISER HILL

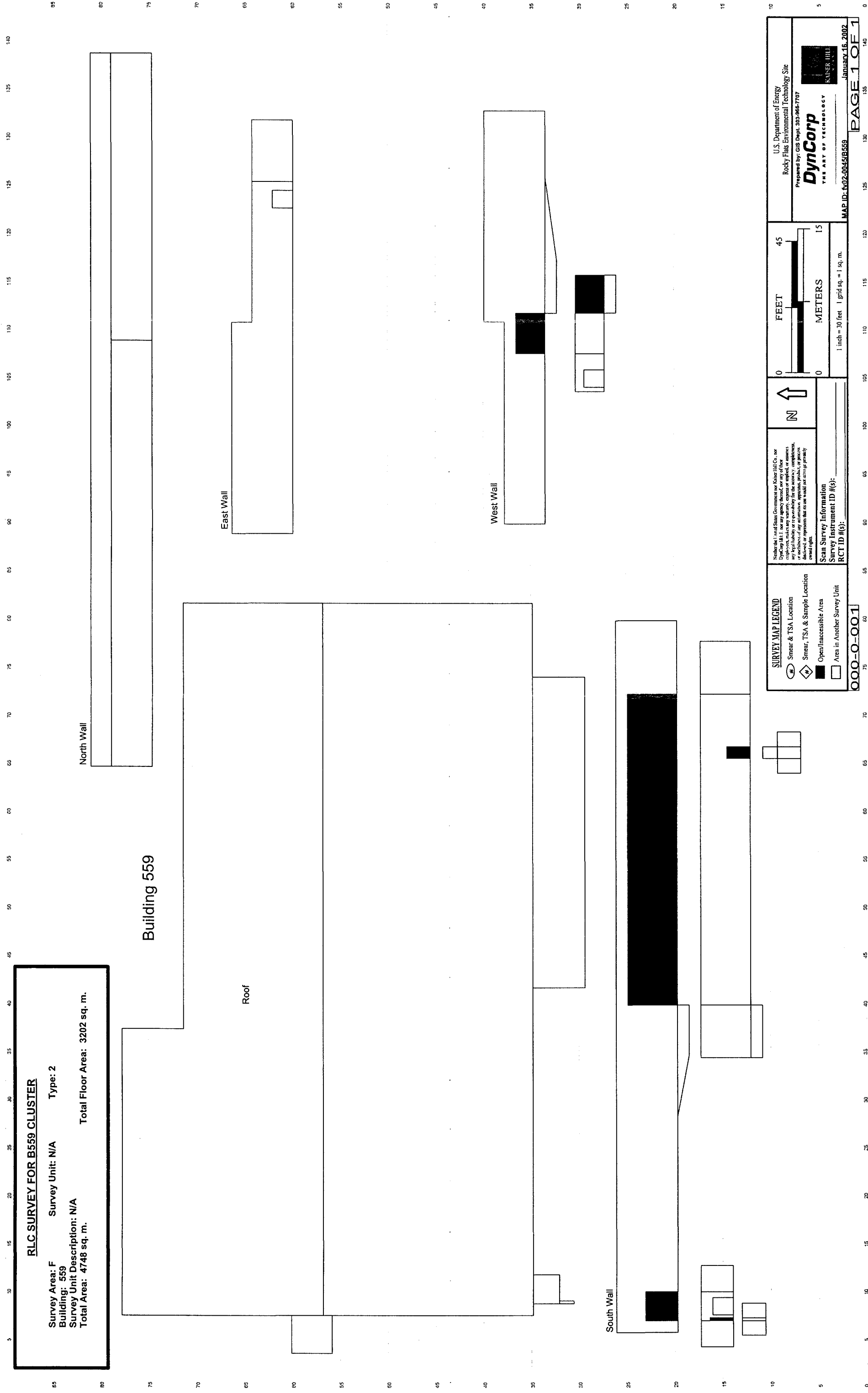
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January 11, 2002

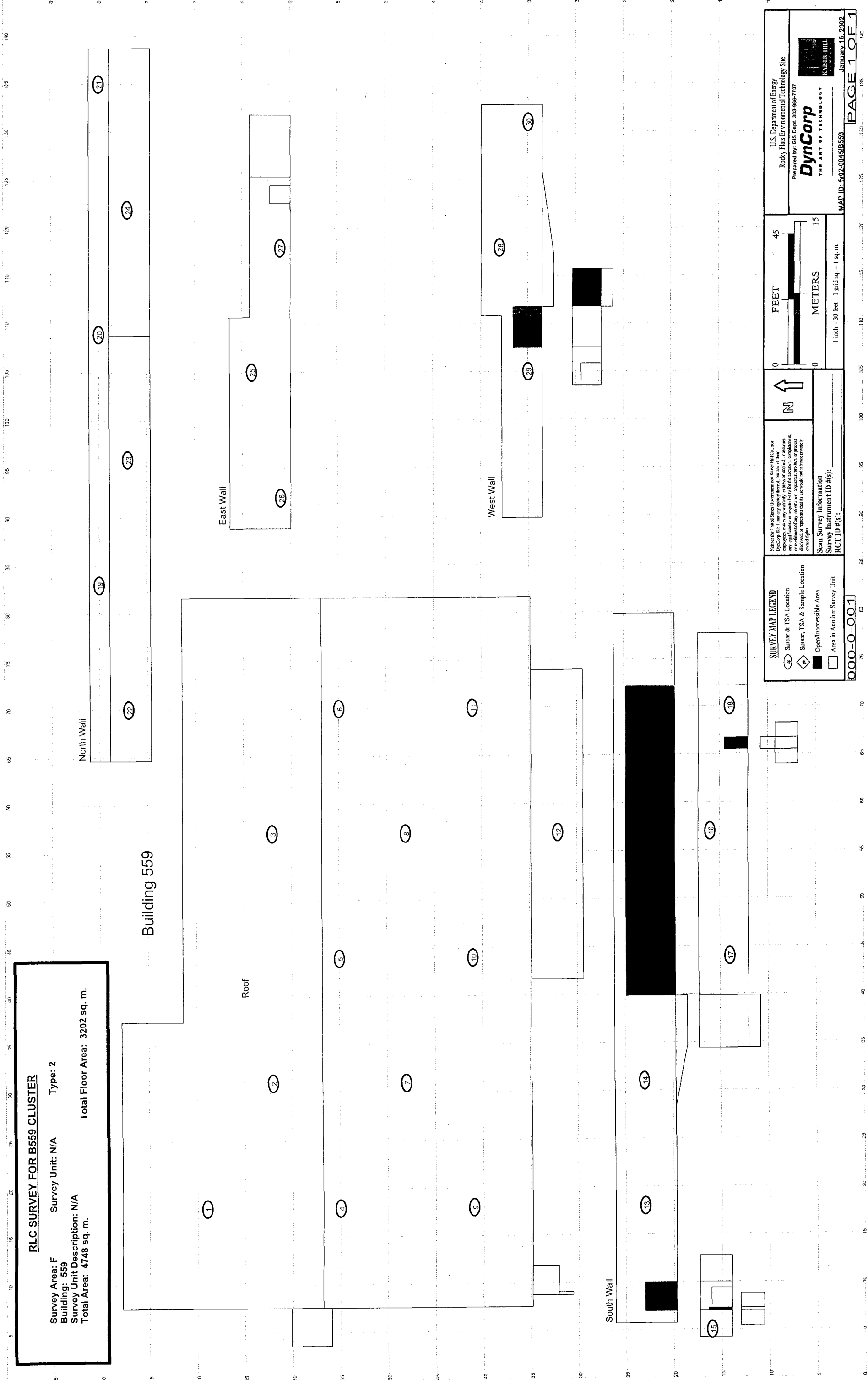
1 inch = 30 feet
1 grid sq. = 1 sq. m.

0 45
0 15
FEET
METERS

PAGE 1 OF 1

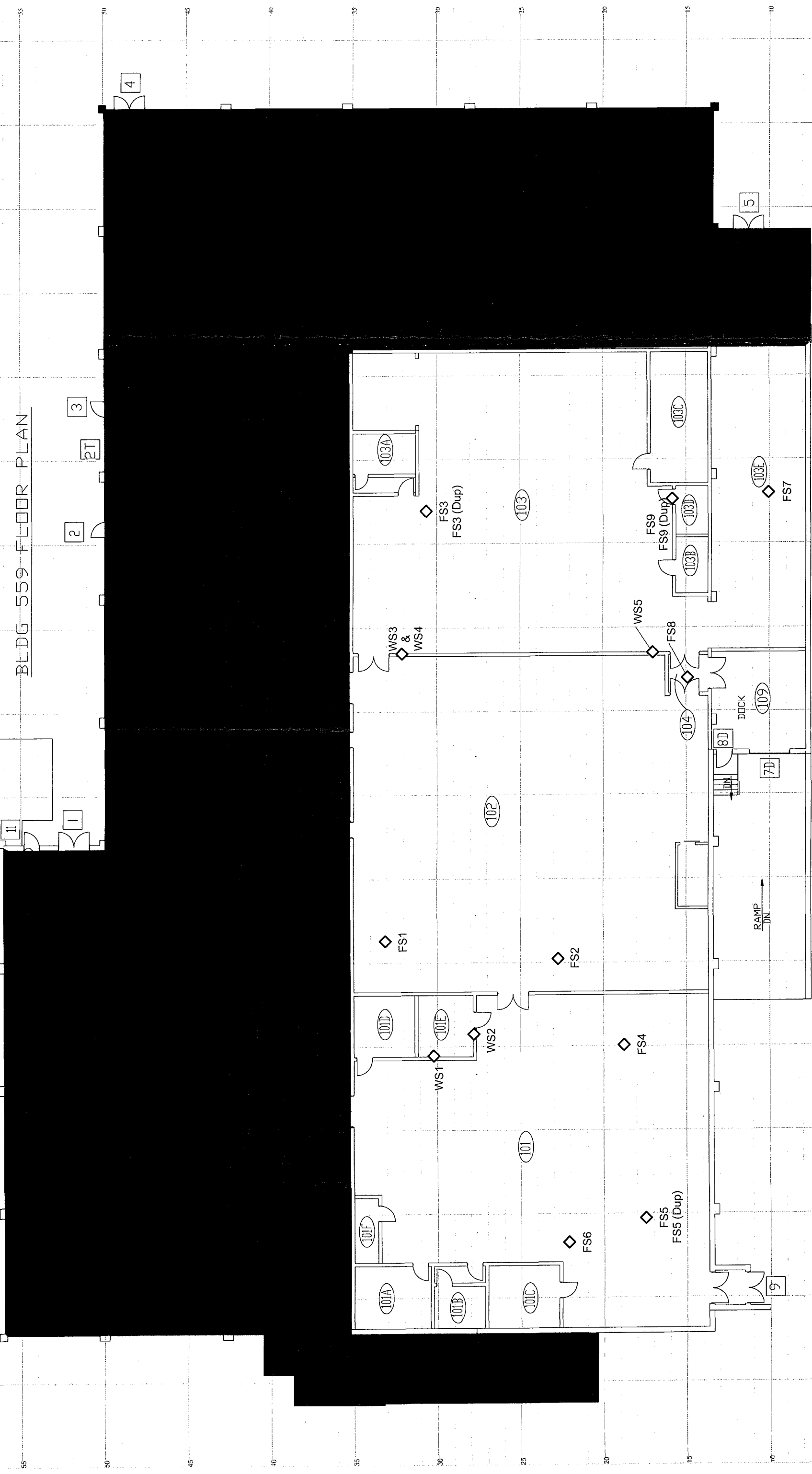






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BLDG 559 FLOOR PLAN



RLC SURVEY FOR B559 CLUSTER			
Survey Area: A	Survey Unit: N/A	Classification: N/A	
Building: 559			
Survey Unit Description: Interior			
Total Area: N/A sq. m.		Total Floor Area: N/A sq. m.	

WS1<6'	
WS2>6'	
WS3>6'	
WS4<6'	
WS5<6'	

SURVEY MAP LEGEND	
• Smear & TSA Location	
◊ Smear, TSA & Sample Location	
■ Open/Inaccessible Area	
□ Area in Another Survey Unit	

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Scan Survey Information	
Survey Instrument ID #(s):	
RCT ID #(s):	

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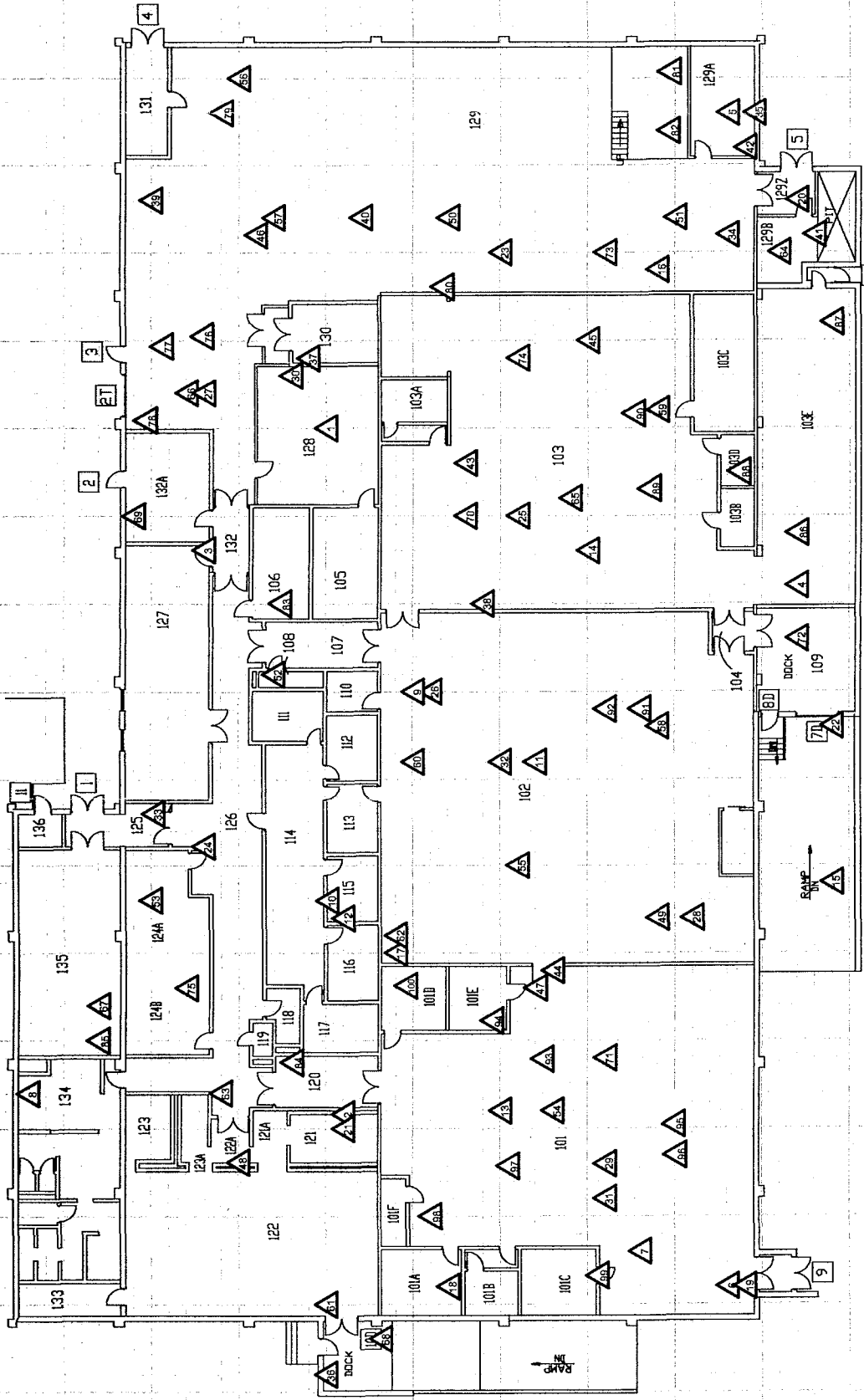
KAISER HILL

January 11, 2002

MAP ID: 02-0256/559-WS

1 inch = 18 feet 1 grid sq. = 1 sq. m.

CHEMICAL SAMPLE MAP
Building 559



BLDG 559 FLOOR PLAN

SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCKA/CERCLA Sample Location
- PCB Sample Location

Notes: This map is a summary of the data collected by DynCorp and is not intended to be used for legal or regulatory purposes. It is not a guarantee of accuracy or completeness. It is not a representation of the actual conditions of the site. It is not a representation of the actual conditions of the site.

Open/Inaccessible Area

Area in Another Survey Unit

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MAP ID: R2001/01-0981/B559-BE September 27, 2001

1 inch = 30 feet 1 grid sq. = 1 sq. m.

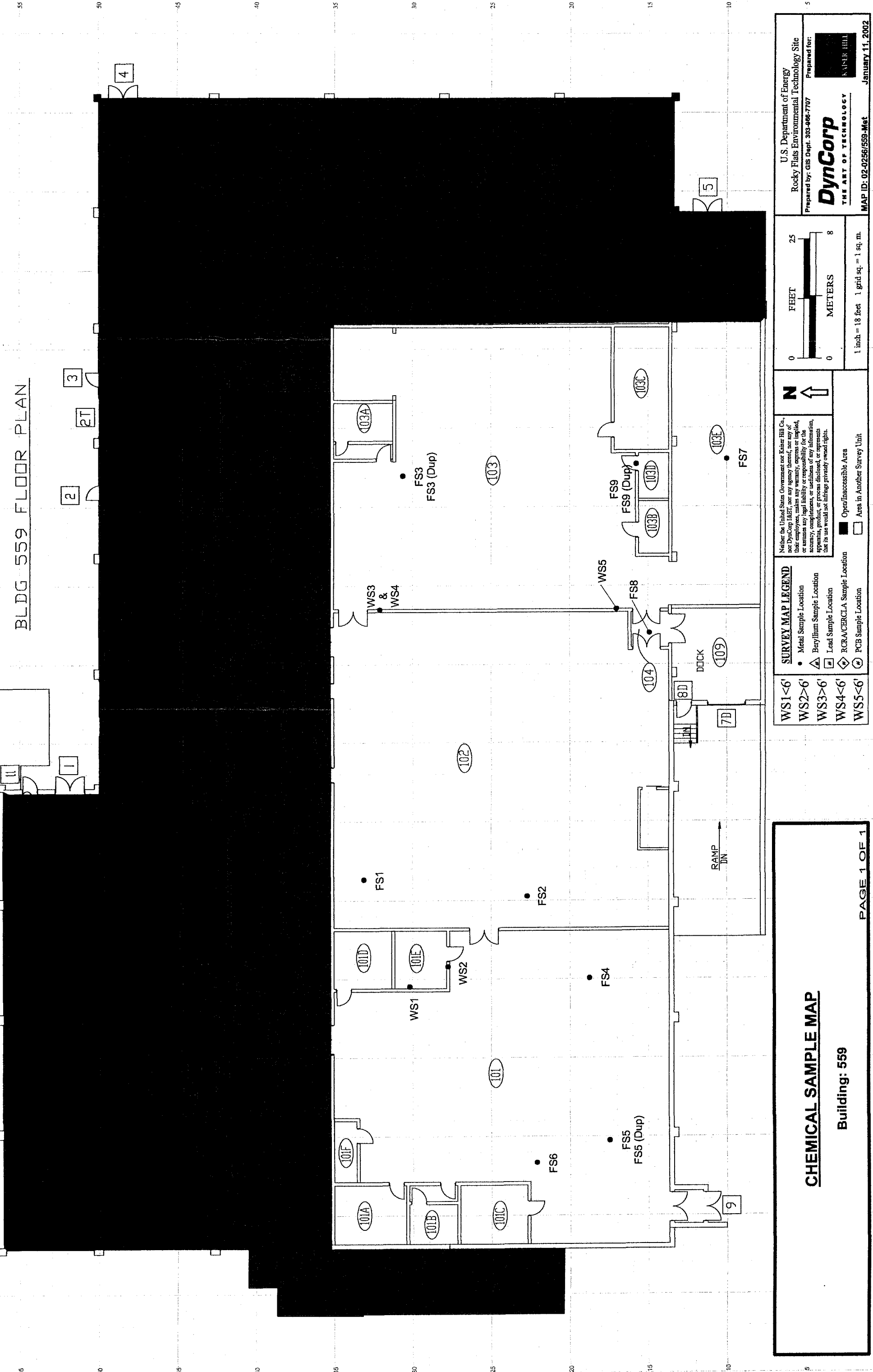
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0 15 METERS

1 inch = 30 feet 1 grid sq. = 1 sq. m.

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PAGE 1 OF 1

BLDG 559 FLOOR PLAN



CHEMICAL SAMPLE MAP

Building: 559

PAGE 1 OF 1

SURVEY MAP LEGEND

WS1<6'
WS2>6'
WS3>6'
WS4<6'
WS5<6'

• Metal Sample Location
▲ Beryllium Sample Location
■ Lead Sample Location
◆ RCRA/CERCLA Sample Location
● PCB Sample Location

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↑

1 inch = 18 feet 1 grid sq. = 1 sq. m.

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MAP ID: 02-0256/559-Mat January 11, 2002